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W. L. Harrison William L. Harrison
Douglas MacArthur Douglas MacArthur
Dwight D. Eisenhower Dwight D. Eisenhower
C. W. Nimitz C. W. Nimitz
H. H. Arnold H. H. Arnold

Grain

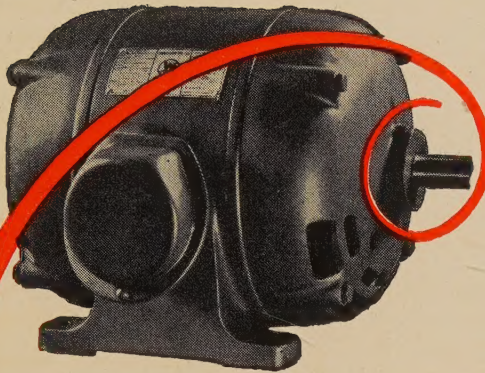
MAY, 1945

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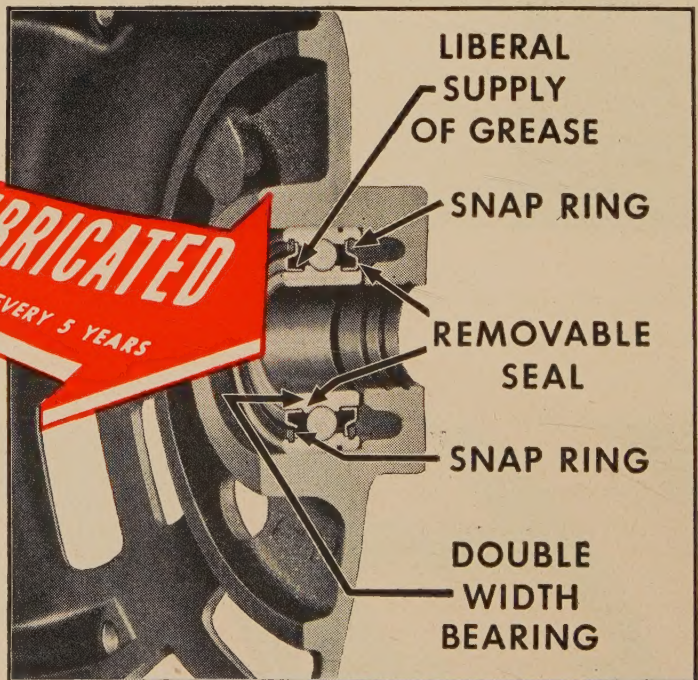


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Type CSP Motors

Sizing Wheat for the Miller

Test Weight Should Be Eliminated as a Grading Factor, Edgar S. Miller, Editor of "American Miller," Suggested Before the Society of Grain Elevator Superintendents. His Illuminating Thoughts Harbinger Current Trends in the Southwest to Grade by Kernel Identification.

A GROUP of prominent operative millers have for some considerable time been endeavoring to prevail upon those in authority to alter the grade standards for wheat with a view to eliminating test weight as a measure of milling value. A great deal of opposition however, rides just below if not upon the surface of the traffieway of commercial transactions. To determine the grade of wheat without taking its test weight into account is "unthinkable"—for it never has been done. But things are occasionally done that have never been done before, and in many instances the accepted practices of years have had to be changed, in spite of remonstrances, because they are proved faulty.

Test Weight Not Always Criterion

IT is a generally accepted notion that the test weight of a wheat is an absolute criterion of its flour yielding capabilities. More often than not it is at least good. It has demonstrated time and time again in recent years, however, that the exceptions are too numerous and too important not to be taken into account.

For example, let's consider a "struck" bushel of good, sound wheat weighing exactly 60 lbs. The moisture content is, say, 13%. Let's add sufficient water to make the grain contain 15% moisture, giving time and opportunity for complete absorption. Of course 60 lbs. of the wet wheat cannot be accommodated in a "level full" bushel measure. That is well understood. But the significant thing about the experiment is that the grain may be dried until its moisture content is exactly equal to that of the original—13%—without returning t h e

weight of 2,150.42 cubic inches of it to 60 lbs.

It may be supposed that the difference is due to a "roughing up" of the bran coats as a result of the wetting and drying. That also has an effect, but it is not the chief reason for the changed "test weight." What has occurred is this: the berries swelled when the added water was absorbed, for the liquid more than filled the original in-

GLUTEN STRENGTH A GRADING FACTOR

Much more emphasis will be put on gluten strength and on VARIETY of wheat in grain grading and marketing in the near future, Dr. John H. Parker told the Arkansas City Kiwanis club in speaking on "Six Thousands Years of Wheat."

"With the demand shifting to high quality grain, Kansas farmers must produce to meet this need or else face the threat of losing markets," he pointed out, "as production of large quantities of low quality or mixed grain means lower prices and a black mark on the state's wheat reputation."

terstices between the constituent particles. The physical structure of each berry was altered by the swelling. During drying, the liquid water that had been added was changed to vapor. There was no place for all this water in vapor form within the berry, so most of it was expelled by the pressure resulting from its formation. This must be true, else the moisture content of the grain would not have

decreased from 15% to the original 13% of the total wheat weight.

Unreliable Index to Soundness, Too

IN some degree, test weight may be an index of soundness. It is not important as such, even if it were reliable—which it is not. In the case just considered, similar grain might be repeatedly wetted and dried as it stood in the field in a shock, and if the periods of wetting and drying followed each other at intervals sufficiently close to prevent the commencement of actual decomposition, the properties of the endosperms, with regard to the nature of the flour that could be produced from them, would not be deteriorated in the least.

Under the present grain grading standards, only wheats having a test weight of 60 lbs. may be graded No. 1 in the hard red winter, soft red winter, durum and white wheat classes, and this test weight is also required for "No. 1 heavy" in the class hard red spring.

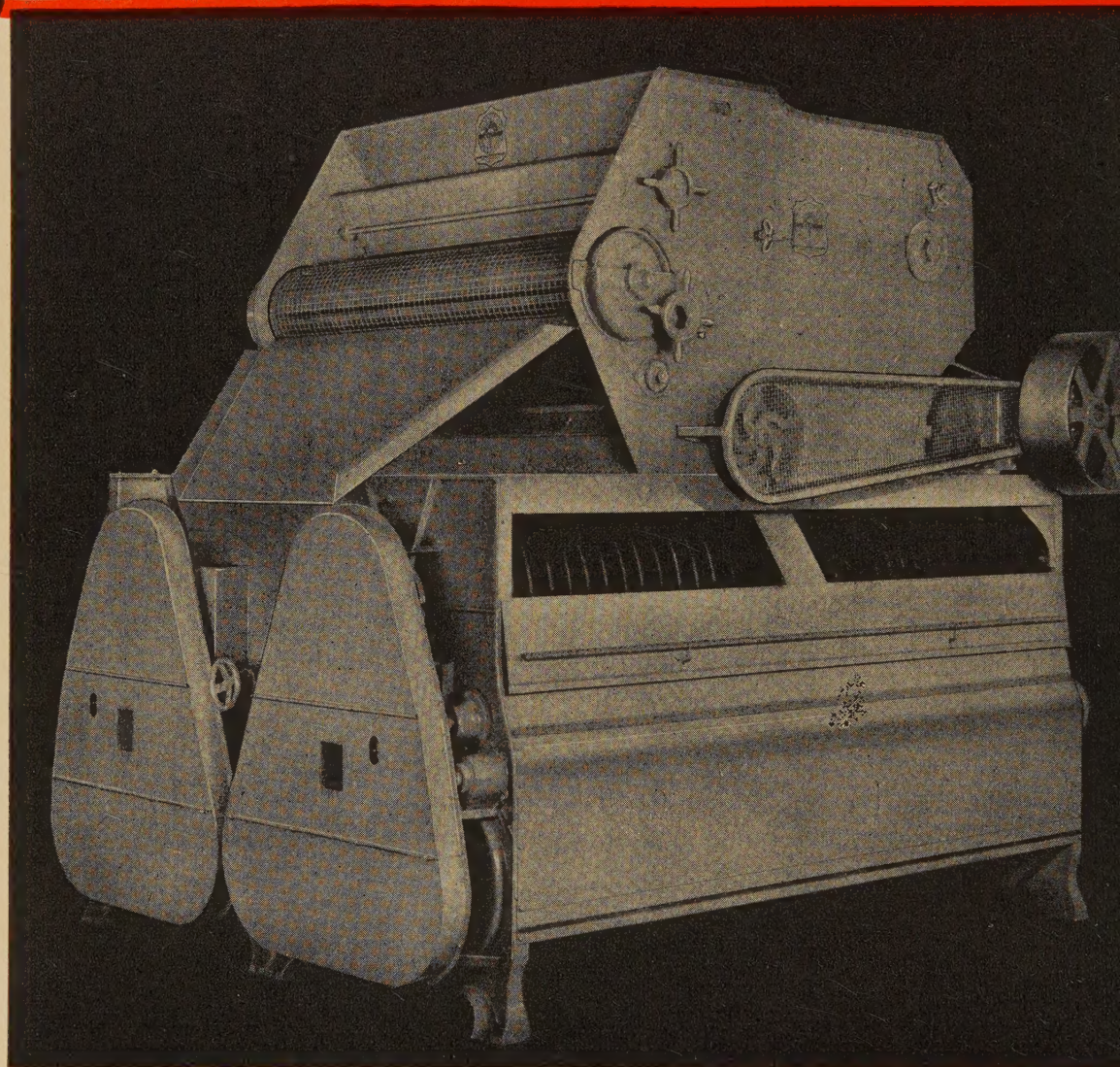
With all but the latter, a test weight even 1/10 lb. below 60 throws the wheat into the No. 2 grade. Yet the 60-lb. or above test weight wheat of any of the classes may contain 7% of thin, shriveled berries which can be passed through a 20 gage metal sieve with slotted perforations 64/1,000ths of an inch wide and 3/4 of an inch long.

For the most part, shriveled berries detract sharply from test weight, but under some circumstances a very large portion of the stuff that can be removed with the sieve described may be retained without lowering test weight at all. That is one reason why test weight is misleading as an absolute measurement of milling value, speaking only in terms of flour yield.



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Vast Physical and Chemical Differences

Another and much more significant reason is that much of the throughs of the slots specified is made up of wheat berries differing so greatly in physical and chemical characteristics from the relatively plump berries that they significantly affect the dough-handling and baking characteristics of the flours milled, if they are permitted to pass to the first break rolls as a part of the regular mill mix.

A good many operative millers believe that there are distinct advantages in breaking large berries and thin berries separately, giving each class different treatments with respect to roll adjustment and the disposition of the products of breaking to grading, purifying, middlings-reduction and flour-dressing equipment. In any case, however, since it is accepted that much of the material that would ordinarily be separated from the plump berries by width grading is distinctly inferior, it seems apparent that berry width is a more logical criterion of the milling value of a wheat than is test weight.

Leaving shriveled berries out of the consideration for a moment, let's have a look at the proposition that the test weight of wheat is modified not merely by moisture content but by the effects of moisture absorbed and ejected. This was shown graphically in charts published in *Milling Production* in connection with an article by C. O. Swanson, of the Department of Milling, Kansas State College. A clear vial was filled up to a mark with room-dry wheat, the method of filling corresponding fairly closely to that employed in filling a test kettle. The grain was then poured out and dampened. After allowing sufficient time for complete water absorption, the berries were again placed in the vial, using the same care as before. An increase of volume amounting to almost 25% was observed.

Can't Shrink Back to Original Size

THE same wheat was then removed and allowed to dry for several hours, a part of the time subjected to direct rays of the sun and to a constant draft of air from a small fan. When the moisture content of the grain was certainly less than at the start, the wheat was returned to the vial. The volume was considerably less than when fully wet, but it did not return to that of the room-dry wheat. The berries swollen by the absorbed water to 125% of their original size lost only about half of the increase during drying.

It is plain that the difference was due largely to the increased volume of the air spaces within the kernels. A struck bushel of such grain would not weigh as much as did the same volume of wheat before wetting and drying, but 60 lbs of it would almost surely produce just as many pounds of acceptable flour. There would actually be no change in the ratio of endosperm to bran, on the basis of weights. True, the endosperms would be less dense, but the value of the wheat per pound would not be lessened because of these air spaces.

The proposition reminds me of a story that impressed me as very humorous when I was a boy, quite a good many years ago. It was related that a fussy old woman, possibly a male, bought a large cheese and took it home, having paid for it at so much per pound. Upon cutting into the cake an extraordinarily large hole was discovered. Outraged, the customer bore down on the seller, accusing him of



WON'T YOU SIT DOWN. WE'LL BE OUT IN A MINUTE!

cheating. The merchant was unperturbed, however. "There is no need for dissatisfaction," he said. "Just return the cheese and I'll weigh the hole, paying you for all the cheese it contains."

Flour Yield Good Despite Deceitful Appearance

SWANSON showed in the article beforementioned that the average decrease in test weight of ten samples was approximately 1.11 lbs. for each per cent of absorbed water while the water was contained. Drying the grain down to its original moisture content indicated that the average decrease in test weight over the original undampened samples was close to 0.57 lb. for each per cent of water absorbed and later ejected. There are several recorded instances in which wheat that had obviously been wetted and dried under conditions unfavorable for spoilage tested considerably less than was expected from its general appearance but yielded a percentage of acceptable flour as high as

would have been counted upon from grain with a test weight 2 or 3 lbs. higher.

It may be objected that the elevator operator is not particularly concerned with the effect of damping and drying on test weight, since such effect will have occurred prior to the receipt of the grain at the elevator. It must not be forgotten, however, that the moisture content—and therefore the test weight—of wheat fluctuates significantly as a result of fluctuations of the weather. There have been instances in which a wheat known to have a test weight of 58 lbs. was loaded into cars and transported, and which upon unloading legitimately tested but 57.5 lbs. It was, of course, thrown into a lower grade.

True, the decrease in test weight was accompanied by an increase in total weight, accounted for by the moisture absorbed from the air. However, if the grain under discussion were later subjected to conditions which would cause a loss of all the water absorbed, bringing it back down to its original moisture content, the test weight of 58 lbs. would not be restored. Basing calculations on Swanson's figures, the final test weight might be expected to be about 57.75 lbs., a decrease sufficient to keep the wheat in the lower grade.

Ash Content Better Guide

IF grades were based upon width of berries instead of test weight there would still be the effect of moisture absorption and ejection to consider, of course. There would be this significant difference, however: the effect of swelling is much less on width than upon volume, since the wheat berry is ovoid in shape and has two diameters which must be considered in connection with test weight. Moreover, the long diameter is usually nearly twice as great as the short one; and while a lengthening of the berry as a result of swelling would have no effect upon width, it would have about twice as much effect upon volume as the same percentage of increase of the short diameter would.

It has been suggested that the ash content of wheat is a more reliable figure upon which to base possible flour yield than test weight can possibly be. At first glance this may seem an untenable theory, but when it is remembered that the miller in making a flour yield must limit the ash content of the flour produced to a stipulated figure, it is not hard to see that while perhaps 73% of the total weight of a wheat that would itself have an ash figure of 1.6%, for example, may be made into a flour with an ash figure of 0.45%, it would be quite im-

possible to get 73% of a wheat with an ash figure of 1.75% into a flour with the same ash content as before.

The ash content of a wheat is strongly indicative of test weight when test weight is decreased by the presence in the mix of shriveled berries. The bran coats ordinarily carry ash-producing materials in amounts 20 to 25 times as great as those of the endosperm. The ratio of germ ash to endosperm ash is also high, being perhaps 12 or 14 to 1. Of course shriveled berries have a much greater ratio of bran to endosperm than do plump berries, and in most cases the germs of small, shriveled grains are as large as those of plump ones.

Mineral Content Constant

AS was pointed out by Julius Jurkow, milling superintendent for the Sheridan (Wyo.) Flouring Mills, Inc., the total of minerals (and the total of starch and protein, too) of a wheat berry is the same in the separated parts as it was in the berry before milling. Therefore, it is impossible to get as much flour with a given ash content from wheat having a greater percentage of minerals.

Width of berry alone is not sufficient for grading wheats, of course, but no one holds that test weight is, either. If width of berries were substituted for test weight, all other requirements (except those concerned with the inclusion of "shrunk and/or broken kernels of grain and other matter" that would pass through a stipulated sieve) would be retained. It seems probable that the miller would have a better idea about the grain he was buying, and the merchandiser of

milling wheat would not be disadvantaged by the fact that he would be in position to furnish his customers what they wanted and were willing to pay for.

No doubt wheat growers would offer objections. There always have been objections in that direction to any method of grading through which inferior stuff was discovered and devaluated. That does not, however, have any legitimate bearing upon the fairness of a method of grading that will reveal true value in greater degree than will the factor of test weight.

HONEYMEAD TO CARGILL

The 4,300 bu. daily processing capacity plant at Cedar Rapids of the Honeymead Products Co. was just acquired by Cargill, Inc., of Minneapolis. This solvent extraction unit has 200 tons daily feed production capacity and 700,000 bu. grain storage. D. O. Andreas will continue as manager.

Cargill's partially destroyed bean plant, formerly known as the Iowa Milling Co., also in Cedar Rapids, will be rebuilt as soon as materials become available.

KURTH BUYS TERMINALS

Elevators A and B at Manitowoc have been purchased for grain storage purposes by the Red Arrow Malting Co., a new concern headed by Herbert C. Kurth of Milwaukee, president of the Wisconsin Malting Co. Since 1939 the 2,400,000 bu. capacity plants have been operated by the Norris Grain Co. Mike Hermann remains as resident manager.

PILLSBURY INTO OHIO PROJECT

A \$500,000 feed manufacturing plant for Pillsbury Mills, Inc., at Lima, Ohio, will commence going up as soon as critical materials are available. The company just acquired the property of the Allen County Farmers Exchange as a nucleus, according to Clyde H. Hendrix, Pillsbury's vice-president at Clinton, Ia., in charge of this division.

ENLARGING MALT PLANT

The Transcona plant of the Dominion Malting Co., four miles from Winnipeg, is being enlarged at a cost of \$1,160,000. This will double present capacity to 2,410,000 bu each year. A 600,000 bu addition to the elevator is included, according to C. S. Small, vice president and general manager.

NEW MILL FOR HURON

Shelved shortly after the blueprints were completed following the bombing of Pearl Harbor, the Eastern States Co-operative has recently signed contracts for the construction of a large new feed manufacturing plant at Huron, Ohio. Work will depend upon obtaining the necessary materials and equipment.

HONEYMEAD IN EXPANSION

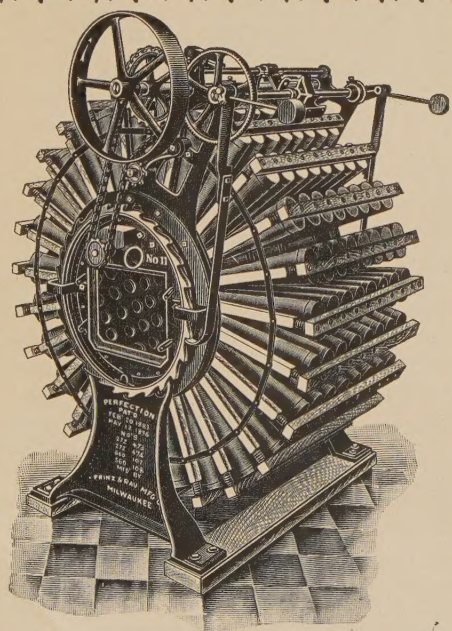
Just as soon as building plans are complete the Honeymead Products Co. will erect new soybean processing plants in Austin, Minn., and Jefferson, Ia. Priorities have been obtained. The company now operates plants at Spencer and Washington, Ia., and just sold its Cedar Rapids plant.

TERMINAL PLANT IN ARKANSAS

A \$350,000 rice storage and drying plant is to be erected at Jonesboro, Ark., for the Craighead Rice Milling Co. Work is under way.

RALSTON'S BIG SOY PLANT READY

Ralston-Purina's new 1,000,000 bu. annual capacity soybean processing plant is being placed in operation, the company's fifth. Equipped with four super-expellers and located at the company's mill in Kansas City's east bottoms, both carload and truck lots can be handled expeditiously. John C. Skaggs is manager of Purina's local operations, Wm. H. Kamp is superintendent, and G. H. Banks is supervisor of soybean operations.



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CRITICAL MOVEMENT FACTOR IS LABOR, NOT BOXCARS, SAY MINNEAPOLIS SUPERS

A SHORTAGE of labor for unloading grain at terminals rather than a shortage of boxcars will be the bottleneck in moving the large wheat crop now in prospect in the opinion of the members of the Minneapolis SOGES Chapter expressed at their May monthly meeting, according to word from President Clifford A. MacIver of Archer-Daniels-Midland Company, who presided. The grain houses are not getting sufficient labor from USES or any other source to maintain full-scale unloading operations. And of the laborers they are getting, the superintendents were unanimous in their agreement that very few are physically capable of doing the job—one of the most disagreeable around the plant.



"There has not been any improvement in the method of unloading grain in the past 50 years," one superintendent reminded his listeners. With the exception of the huge car dumpers, practically all of the methods now in use consist of some modification of the drag-line shovel of the Clark type.

Pneumatic unloading systems in their present form are unsatisfactory in their combined opinions, due to the hard work involved in handling the lines and suction nozzles. Ample praise is due this method, however, for its dustlessness and the ease and speed of the final clean-up.

Describing the pneumatic unloading system being tested by The Day Company, Vice President Arthur B. Osgood prophesied that contemplated changes and improvements based upon findings would help to perfect this installation far beyond present capabilities. Suction engineers apparently have further research to conduct on the phenomena prevailing within the suction tubes under varying conditions, upon which The Day Company can be counted upon to determine.

Dumper Use Thought Restricted

ONLY the larger terminals that are equipped with a car dumper at the time they are erected can adapt

this type of an unloader to profitable use, some said. Despite the dozen or more car dumpers that have, are being, or are going to be installed during the present two crop years, some opined that the initial cost, the track-age requirements, and the rebuilding of slower legs and conveying equipment, deterred them from making installations. The Richardson Scale Co., however, is booked ahead solidly for eighteen months on car dumpers, so no relief is in sight from this direction anyhow.

Considerable caulking and preliminary work is involved in the use of hopper-bottomed coal cars that several superintendents told about, to say nothing of the expense involved in covering the cars after they are loaded. Cement cars, on the other hand, were declared the answer to the superintendent's prayer, for they are grain-tight and equipped with roofs.

"The average boxcar hauls only two loads of grain per year," was the answer given by one superintendent to the question of: "Why can't the railroads design and build a hopped car to be used exclusively for the shipment of bulk grain and grain products?" Inasmuch as the industry uses so many cars this makes it economically inadvisable to change design, one superintendent said, in spite of the many special cars that are constructed for other industries of lesser tonnage, revenue and consistency of use. This "average" idea, however, was quickly challenged by another superintendent

who believed that great numbers of box cars east of the Mississippi are never used for grain movement yet are added into the figures in computing that "average."

Appoint Committee To Study Problem

UNLOADING methods absorbed the balance of the discussion-meeting, which round table was conducted by Paul Christensen of Van Dusen-Harrington Co. Broad interest was obvious by the attendance of 65 members, associates and guests. Mr. Addicks of International Milling Co. described a device that Bill Scoles has in operation at New Prague, arousing an avalanche of curiosity. Paul was appointed chairman of a committee to continue studying this problem, and with his committee, composed of Bob Bredt of Fruen Milling Co., Clarence Bach of Twin City Trading Co., and Clifford MacIver of Archer-Daniels-Midland Co., made a trip to New Prague to inspect the new equipment, upon which subject we hope to have more to pass on next month.

NEW FEED MILL IN EAST

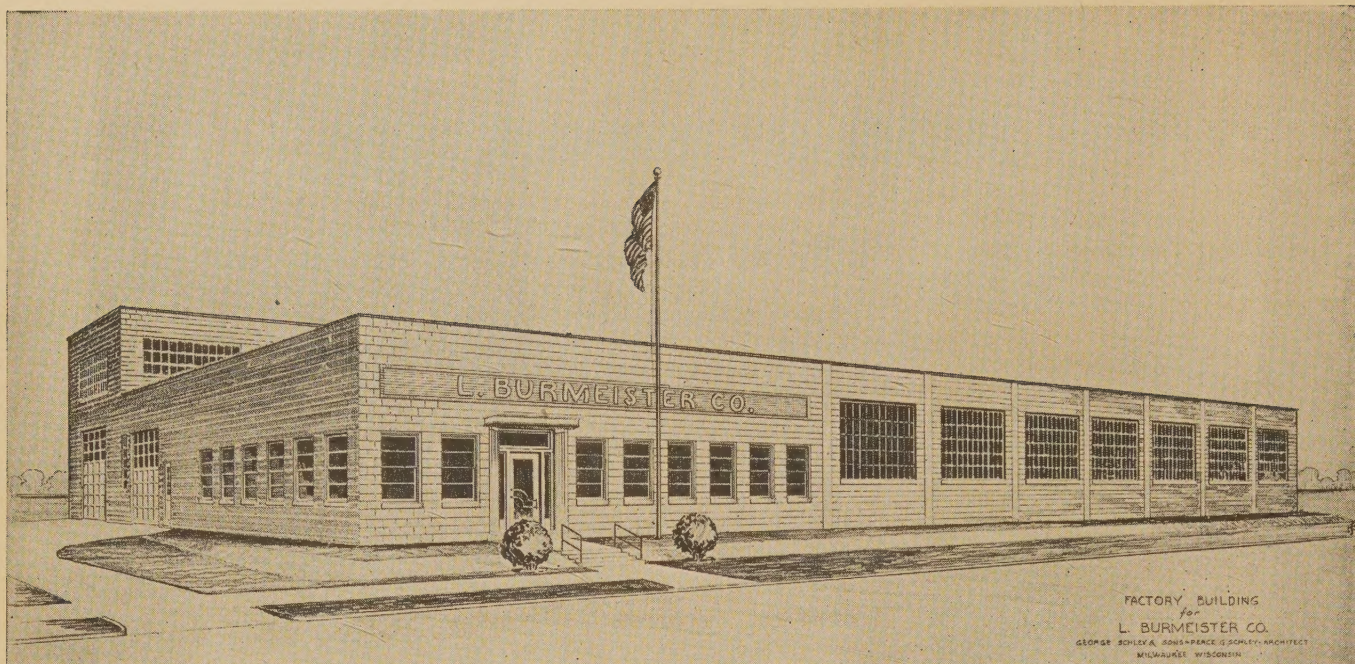
A \$1,500,000 feed manufacturing plant of 300,000 tons annual capacity is to be erected on a 22 acre site just purchased in Baltimore by the Southern States Co-operative, Inc., of Richmond, Va.

OSCAR OLSEN GETS WMC DIRECTOR AND USES MANAGER TO UNLOAD HIS BOXCARS

"Oscar" is the name adoringly applied to the coveted annual trophies awarded screen actors and actresses, but "Oscar W. Olsen" by this time won't be a name associated with other than clouds of dust and mountains of hard work in the minds of Carl Mahnke, area director of the Duluth War Manpower Commission, and Julius E. Hoga, manager of the local U. S. Employment Service office. On the promise that he would send twenty men to Peavey's Duluth terminal within a week or come down and

shovel out cars himself, Mr. Hoga learned about Duluth's labor shortage the hard way. Several thousand cars of grain en route to Europe are tied up because of lack of hands to unload them, and even dramatic radio appeals aired right from the elevators brought out but four volunteers.

Oscar has long been advocating the development of an efficient and fast car dumper that could suitably be installed in older houses without re-vamping the leg and conveying equipment.



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 want you to see how much better set up
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 services that for many years have been
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 performance throughout the grain proc-
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RAILROADS STUDYING CAR DESIGN

PRESENT conditions have served to emphasize that the help necessary to unload box cars of grain and grain products is something of the past. We do not anticipate that after the war our workers are going to condescend to do this kind of work. True, many a company executive got his start at the end of a shovel rig, but that does not mean that such "opportunities" are going to be needed in the future—despite the fact that in a few spots improved devices are being discontinued because of the unfounded fear of unemployment in the future.



This month one of the mechanical committees of the Association of American Railroads held a meeting in Cleveland. Among other things discussed was the subject of unloading bulk commodities from box cars. Five engineers from the heavier grain carrying roads were appointed to a committee to investigate the possibility of designing a type of car that would expedite the unloading of grain, etc. This committee will report back at the next meeting in September.

Hard pill to swallow were the returns from a survey made by the carriers from some thirty flour mills who requested that no change be made because, they said, they preferred to load the box cars of grain they unloaded with flour and feed. A few protested that they were not equipped to unload hopper-bottomed cars, having only a side-of-car grill opening. Perhaps if more plant operators had attended the last several SOGES conventions we might have arrived at an all-around satisfactory conclusion on the best answer for our most current annoying problem. If we are going to get any where all must join hands and work out an answer with the carriers. Surely a dozen different answers from a dozen different people is conducive only to no progress whatsoever.

My observation, based on first hand investigations and correspondence throughout the continent, is that progress will not be stifled. Oscar Olsen of Duluth has clamored for years for something better than the Clark shovel which we have used in our industry since well before the turn of

the century. The Glidden Company did something about it. Both have led us to thinking pertinently about the subject. Our next step is to crystalize our scattered thinking and all agree on what's needed and what's wanted, with consideration for other bulk shippers.

Suggests Publishing All Ideas

TO THE ABOVE ends I suggest that every idea roaming around in the backs of our collective minds be "aired," preferably with illustrations, in "GRAIN." These might best be considered by a special "Car Unloading Committee" in each SOGES chapter, along with any other associations who care to join us in this endeavor. When all have agreed on the best design of a box car then with a united front we can tell the carriers of our needs and desires. Railroads are not asleep, they are not ignoring the increasing tonnage of grain and grain products being hauled by trucks. They likewise remember that they themselves were the original grain shippers of the country, that they built and operated all the country elevators years ago—and still have a few of the terminals they built and operated as an adjunct to their operations.

By and large the grain trade has been particularly partial to the railroads. No other industry has such a long record for high loyalty. In the past twenty-five years the fewest number of cars shipped in any week, w-e-e-k—not month, was 24,000. The peak of the season runs between 60,000 to 65,000. Currently the average weekly loadings are over 40,000. The railroads want this tonnage to continue and will co-operate with us to that end. Likewise they would be justified in giving us far more consideration than they do to say the vegetable growers, whose commodities result in high claims, special handling, special equipment, and oftentimes no profit. Now it's up to us to start our ponderous wheels in motion and to get clicking.

A number of ideas have been aired and if we are going to get any place we will have to work hard and fast. The railroads are planning the construction of their post-war design cars today. What's your idea? How about offering a prize for the best ideas among your plant men and telling "GRAIN" about them? Will you contribute your share of thoughts to

this worthy project now?—Emil Buelens, The Glidden Co., Chicago, Director SOGES.

NEW TYPE BOX CAR

Many have reported the successful use of gondolas for shipping grain where the railroad has furnished a covering for the cars. Cement and sand cars have also been used successfully. It has been pointed out that while special cars have long been made for automobiles and furniture, there has been no improvement in grain handling cars for 50 years. As a result of the success in using bottom unloading cars for grain and getting away from car doors and the expense of installing them and taking them out, the railroads are studying the problem and plans are now on the designing boards for special grain cars. Such cars will require some changes in elevators, however.—Colorado Grain, Milling & Feed Dealers Ass'n, Fort Collins.

A GOOD OPPORTUNITY

If past experience is a reliable guide to the future, prices are likely to drop and the buying power of the dollar increase within a year or two after the war ends.

If this happens, the dollars you invest in War Bonds this year will buy more when your bonds mature than these same dollars would today.

It is not improbable that the man who buys a Series E bond will make two profits on his investment. If he holds it to maturity, he will receive four dollars for each three he paid. But this is not all. If prices come down when full time production of civilian goods is resumed, as prices have after every major war of the past, he may earn a ten or twenty per cent increase in the buying power of each dollar that he receives.—From The Travelers Protection.

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PLENTY OF FORMER
EMPLOYERS, BUT
WHO'LL WE GIVE
FER REFERENCES?"**

**IT PAYS TO
WORK SAFELY!**

NATIONAL SAFETY COUNCIL

DEVELOPING COMPLETELY AUTOMATIC SHOVEL RIG

The unloading device we are working on has passed the "idea" stage, as suggested recently in "GRAIN". A crude working model has already been set up and made to work. Blue prints have been prepared and we are now endeavoring to secure materials necessary to construction of the finished machine.

Our device is merely an elaboration of the mechanical shovel we saw at The Glidden Company's Chicago plant. Our machine is, however, completely automatic. It has a larger capacity than any shovel we have heard of to date. It will require an operator who will manipulate controls designed to: (1) start the machine, (2) move it about from place to place while the shovel is in motion, and (3) stop the machine when the job is completed. We believe the machine will do a clean job requiring only sweeping in the clean-up.

To date we have confined experiments to our marine leg, to which we have attached the device on collapsible booms. Booms are fixed to the

leg somewhat similar to cargo booms on ocean-going freighters. When the leg is lowered into the ship's hold the collapsible boom is opened full length and lowered until about four feet above the grain mass. Shovel machine is then started up and from that point forward the shovel continues its automatic operation.

The boom is moved from side to side by means of a ratchet-swivel device and is raised and lowered by a rope-rig, all within easy reach of the operator. One operator will be able to control two shovels, thereby permitting two operators to work four shovels, whereas twelve huskies are now used.

One point I want to stress is the commendation that is due Emil Buelens of The Glidden Company for originating the idea upon which practically all current developments are based. Personally I do not believe he has been given anywhere near the credit that is due him, and I believe it behooves us all to tell him so.—Charles J. Winters, Superintendent, New Orleans Public Grain Elevator.

FRAUENHEIM TO ADDRESS CHICAGOANS

Flooded with inquiries following publication of his letter in the last issue of "GRAIN", Ed Fraunheim of Buffalo will appear before the Chicago SOGES Chapter's June meeting to discuss "Car Unloading Devices", with particular emphasis upon his own novel car-tilting invention. Mr. Fraunheim, who is Vice President of the G. J. Meyer Malt & Grain Corp., has also devised a novel clutch arrangement which has been found to be highly efficient when used in conjunction with automatic shovel devices.

Must Give Advance Notice or Pay

Either advance notice or severance pay in lieu of such notice must be given to workers to be layed off.

NEEDLE SCREEN SEPARATOR WANTED

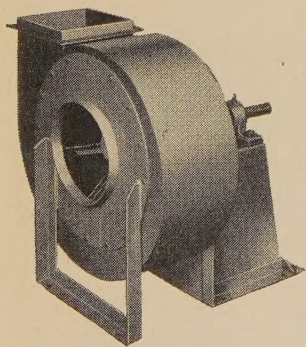
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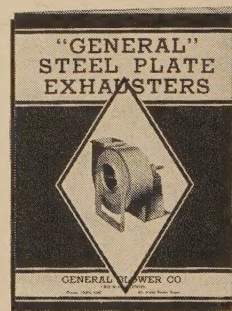
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INCENTIVE PAY PROGRAMS

The only text on incentive pay programs from which we have been able to derive intelligent guidance is one called "Special Investigation Report No. 523, published by The Dartnell Corp., Chicago. It is our opinion that such programs will be delicately and painstakingly introduced some time in the future, but it is hard to try to run a terminal elevator by processing rules dealing with an automobile union. The above report is complete to the point of confusion, however, and ought to be studied by those wishing to become well steeped in sane fundamentals.—Harold Wilber, A. E. Staley Mfg. Co., Decatur, Ill.

Labor Text Ready

Treating the matter of absenteeism among workers, labor turnover, training and upgrading, shift schedules, supervision and wage structures, the "Improvement in Labor Utilization Procedures", Bulletin 807, is the subject matter of a 44-page pamphlet now ready at the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C., for 10c. Working conditions and safety are also considered. An appendix carries five tables giving average absence rates in selected industries, monthly labor turnover rates, industrial injury frequency rates, etc.

IT'S A BIGGER JOB IN '45!

"It's a bigger job in '45!" is the slogan of 3,000 officials of food handling and processing plants now in the midst of aggressive recruitment campaigns, determined that manpower problems shall not hamper the Victory effort in it's vital climax. Peace in Europe will not decrease the tremendous demands of our fighting men and our allies both directly and indirectly for foods and feeds in 1945.

War Manpower Commission and U. S. Employment Services offices are determined that the urgent need for workers this season will be met in time and are lending a helpful hand to all concerned, according to their report, hopeful that handling and processing plants will conquer one of the most serious employment problems to face vital industry of any nation. WMC has prepared a 1945 Food Processing Kit to aid you.

ESTABLISHES TRAILER SERVICE

With the protection of feed and foodstuffs from damage by insects, rodents and other pests becoming increasingly vital as supplies fall short

of world demands, The Dow Chemical Co. announces that it has placed in service a unique fumigation trailer designed to handle special fumigation problems and to aid in the development of new techniques and the improvement of existing practices. R. M. Borg, field engineer, will work in conjunction with established industrial fumigators on special fumigation problems, including ship and barge use.

CRACK-WISE

A farmer is a man who makes his money on the farm and spends it in town, while an agriculturist is a man who makes his money in town and spends it on the farm.

STORAGE AND TERMINAL CHARGES

All terminal elevators are required to file tariffs with Regional OPA offices within 90 days, as that agency has issued MPR 586, effective June 1, which combines regulations affecting the maximum charges for storage and terminal services. Heretofore regulations were effective through GMPR, with modifications established in SR 14-1 and 15, and RMPR 165. Previously established maximum prices are not changed, says OPA.

This would be a poor time for the meek to inherit the earth.

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for heavy-duty legs and grain conveyors and . . .

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Entomological Aspects of

So much interest has been reflected since the appearance of Dr. Smallman's article in "GRAIN" on "Canadian Entomological Investigations" that we publish herewith his full report. In his painstaking research he brings out a number of pertinent pointers of unlimited value to everyone concerned with the conditioning and safe storage of grains. Waterproofing, temperature reading systems, and a more intimate knowledge of the behavior of fumigants, as well as some mistaken notions about the habits of bugs, are all capably unfolded for your benefit.

ATTENDING your meetings during the past two days, I have been impressed with the many aspects of your work and the many professions which find themselves united in a grain elevator or processing plant superintendent. On the administrative side, you are employers of labour with all the problems that that implies; you are often executives in large companies; and you are businessmen associated with the buying and selling of the world's most important foodstuff.

On the technical side your versatility is even greater, for you are mechanical engineers and construction engineers; you are concerned with the measurement of temperature and moisture content which falls in the field of physics; and you must know something of the keeping quality of cereals which involves the field of chemistry.

Supers Are Entomologists, Too

YOU seem to carry these varied responsibilities lightly enough so that I have no hesitation in adding one more and reminding you that you are also entomologists!

The entomological aspects of wartime grain storage in Canada is a subject which I hope will have some interest for the American delegates since they will have heard little about it. The Canadian delegates may also be interested in obtaining a general view of the problems which they have seen or heard about only in local instances.

Tells of Investigation and Control of Stored Grain Pests

AND so I thought it might be of general interest to this conven-

tion to tell you of our experience in the investigation and control of stored grain pests during the past four years. The work has been carried out under the auspices of the Board of Grain Commissioners for Canada, and under direction of the Dominion Division of Entomology. Every phase of it has been made in the closest co-operation and with the invaluable aid of the Canadian grain trade.

The entomological aspect of your work, concerned with the protection of stored grains from insect pests, is a familiar problem to most of the American delegates. But to us in Canada it is something of a new problem. In normal times Canadian grains move forward steadily, allowing little opportunity for insects to become established, and on the prairies particularly, we have the great advantage of severe winter

temperatures. Under these conditions insect infestation of stored grain was practically negligible and no real problem of this sort existed. With the war however, due to conditions which I will describe, we lost both the advantage of movement and of low winter temperatures, and gained the disadvantages of temporary storage structures.

Large Single-Unit Annexes, Moisture, Breed Bugs

THE temporary storage structures were built to house the huge surpluses incurred by bumper crops and wartime curtailment of shipping. These buildings were not intended for long-time storage and were generally not equipped for turning the grain; indeed, most of the country annexes have no proper unloading equipment. So large quantities of grain came into dead storage with all the advantages for insect pests that that implies.

Also, the temporary storage buildings were all of considerable size, storing larger bulks than normal elevator bins. This means greater insulation against low winter temperatures and bins loaded in the late summer or early fall maintained a relatively high temperature in the centre throughout the winter. And so we lost much of the advantage of low winter temperatures.

The temporary buildings were naturally not as weatherproof as permanent buildings and much of the trouble we encountered was related to structural deficiencies which sooner or later allowed moisture to reach the grain.

Infestation In Temporary Annexes

THIS in brief appears to be the genesis of our entomological problems in Canadian stored grain. You will have noticed that all the factors I mentioned are associated with temporary storage. Certainly it is true that almost all our insect problems have occurred in grain stored in temporary facilities. Despite crowding and some lack of movement, grain stored in normal storage has remained relatively free from the insect infestations which occurred in temporary storage. So we have reason to believe that our fall from grace will be as temporary as the temporary storage sheds.

I do not wish to leave you with the impression that insect infestation has

KID SALVAGE



Wartime Grain Storage

been rampant in these storage sheds. Actually, very many of the sheds have carried grain for two, three, or even four years with little or no trouble. It is my work, and it is the purpose of this talk, to deal with infestations as they have occurred. But I should like you to bear in mind that severe infestation has occurred in only a small proportion of the sheds and that actual losses have been very small indeed.

174,000,000 Bushels In Temporary Storage Sheds

TO my mind, the temporary storage program was a remarkably large and adventurous undertaking and has been an eminently successful one. By this device, the Canadian grain trade was able to put under cover 174,000,000 bushels of wheat for which no space existed prior to 1939. I think you will agree that this is a sizable accomplishment.

Difficulties were bound to be met with in such a large venture with a new type of storage, and success has not been gained without an effort as you will see. The physical background of our entomological problems lies in the temporary storage sheds so I think we might begin by looking at some of them.



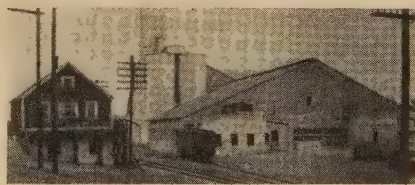
(1) In 1939 and 1940 the Canadian grain trade built about 110,000,000 bushels of space in the form of sheds

By DR. B. N. SMALLMAN, Entomologist, Board of Grain Commissioners, Winnipeg, Before Society of Grain Elevator Superintendents

at country elevators throughout the prairie provinces. This picture shows a group of typical sheds. Many country elevators had two or three sheds and some had as many as four.

Typical sheds like these have a capacity of 30,000 bushels. The floors are wooden, usually raised to leave an air-space between the floor and the ground. Walls and floor were often lined with waterproof paper. The sheds are loaded by means of a spout from the head of the elevator and unloaded by cutting holes in the walls and spouting the grain into trucks.

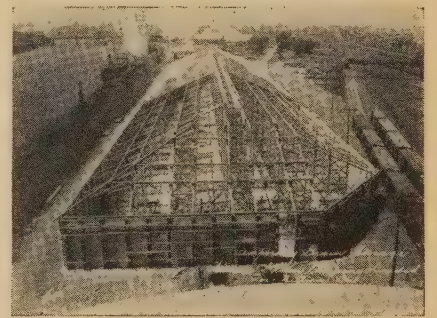
The additional space gained by means of the country annexes was insufficient and the grain trade pressed into service many old buildings throughout the west. These were called "special" or "off-site" annexes and they provided space for an additional 11,000,000 bushels.



(2) This view shows one of them—a burnt-down mill with the tanks still standing and a huge lean-to grafted into them. Most of the special annexes are old mills, warehouses, churches, round-houses, dance-halls, etc., reinforced where necessary and put in reasonable shape to hold grain.

52,000,000 Bu. Built at Lakehead

BY 1941 it was apparent that still more space was required and about 52,000,000 bushels of temporary storage space was built at the Lakehead in conjunction with the terminal elevators.



3—Distress storage annex with roof incomplete, taken from above.

(3) These sheds are distinguished from the country sheds by the name, "distress storage annexes". This scene shows a typical one, having a capacity of about 2,000,000 bushels.

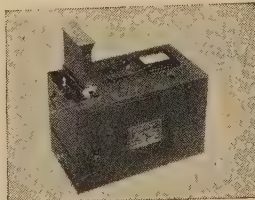
All these sheds were loaded by means of a belt from the elevator and running along the cupola of the shed about 50 ft. above the floor. This picture shows the cupola and the roof-supports. A typical shed like this one, had a length of 600 ft., a width of 144 ft., the load-line was 18 ft. at the walls and there was a depth of about 45 ft. of grain in the middle.

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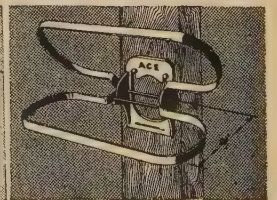
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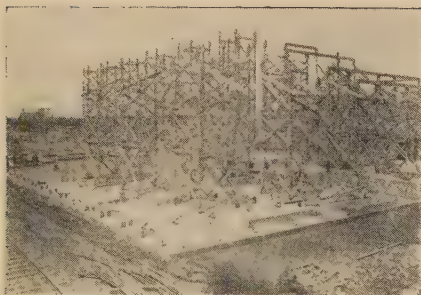


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4—Showing concrete floor and tunnel of annex under construction.

(4) Most of the distress storage annexes were built with a concrete floor as shown in this view. The floor

is a 6 inch concrete mat laid on a gravel fill. Some of these floors were covered with a waterproof paper. This also shows the unloading tunnel. Most of the sheds were unloaded by this device.

60% Unloaded By Gravity

SLIDE-VALVES in the wall of the tunnel and close to the floor of the annex were opened to spout the grain onto a belt into the tunnel. This enabled about 60% of the grain in a shed to be unloaded by gravity. A few of the sheds were unloaded by means of belts on the outside and a few by means of a marine leg.



5—Showing distress storage annex with wooden floor.

(5) While the most of the distress storage annexes had concrete floors, a few were built on wooden floors. This picture shows the wooden floor under the largest annex at the lakehead. It provided for an air-space between the floor and the ground. The slide also shows the immense amount of wooden support work in this largest annex which had a capacity of 5,500,000 bushels.



On The Level

You can get a kill with most any grain fumigant

... if you use enough of it

... and if conditions are favorable

But ... conditions often aren't favorable

And ... conditions often can't be changed.

That's Why So Many Fumigants

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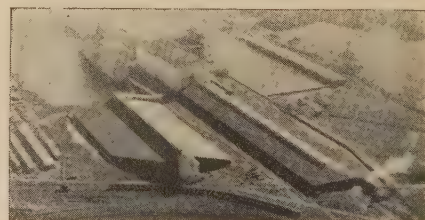
That's Why Weevil-Cide

Stays!



6—Showing supporting members inside annex.

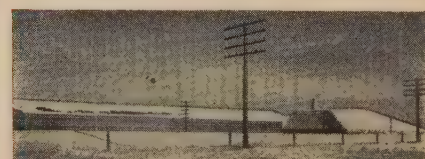
(6) This shot shows the odd effect achieved by pointing the camera down one of the bays you saw in the last slide.



7—Aerial view of two of the largest distress storage annexes.

(7) This is an aerial view of the two largest distress storage annexes at the Lakehead and gives a good idea of their size in relation to the elevators behind them. The one on the left stores 5,500,000 bushels and the one on the right stores 4,000,000 bushels.

By 1942, despite the creation of so much additional storage space, grain began to back up on the farms. Farm-



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THE DEPENDABLE GRAIN FUMIGANT
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 KANSAS CITY, MO.

ers, with granaries full, were obliged to improvise temporary storage of their own.



3—Group of improvised field granaries

(8) These two show other methods—a loop of wire fencing lined with paper and the resulting cylinder filled with grain. More often snow-fencing was used, and instead of paper, sheaves often served as a lining. Sometimes these piles were capped with sheaves and sometimes left open.

Type, Distribution and Habits of Grain Pests

NOW, what of the insects—what types of insects, how are they distributed, and what damage do they cause?

The American delegates may consider our list of stored grain pests a rather innocuous one, for we have had little trouble with the primary stored grain insects—the rice weevil, the granary weevil, and the lesser grain borer. These insects appear to be limited to milder climates than ours in Western Canada and they have appeared in only one small area.

Grain mites were the first pests to appear after the temporary storage program had been initiated. During the winter of 1940-41 mite infestations became quite general in the country annexes throughout the prairie provinces. Grain mites are not properly insects at all but are related to spiders, having four pairs of legs instead of three. They are scarcely large enough to see with the unaided eye. At least five different species occur in Canadian grain but only one of them, which we have called the “common grain mite” (*Acarus siro* L.), develops heavy infestations.

**No Infestation Below 14% Moisture;
Temperature No Deterrent to Mites**

THE moisture content of the grain is of great importance to grain mites and heavy infestations occur only in grain with a moisture content of 14% or more. Grain temperature seems to be of secondary importance, since grain mites can live and increase at temperatures as low as 40° F. and are most favored by temperatures between 65° F. and 70° F.

Heavy infestations of grain mites always occur in grain of high moisture content. This is probably a cause rather than an effect of the mite in-

festation, although the respiration of large numbers of mites undoubtedly produces moisture to further aggravate the moisture condition of the grain.

The “common grain mite” attacks and destroys the germ of the wheat berry, and their excrement and dead bodies provide material for the development of bacteria which may in turn cause the grain to heat and spoil. Heavily infested grain becomes tainted with a characteristic sweetish odor but this tends to disappear during handling. Certainly, grain heavily infested with mites cannot be considered as being in a healthy condition.

The moisture content of the grain appears to be the most important single factor for grain mites, and here I must diverge a little to tell you of our experience with the phenomenon loosely known as “condensation.”

The Phenomenon Called “Condensation”

DURING the winter of 1940-41 we observed that mite infestations usually occurred in a layer of tough wheat which formed at or near the surface layer in the sheds. Great care had been taken to fill the sheds with the driest possible wheat. At that time the sheds (I am speaking of the country sheds) were filled almost to the peak of the roof and there was little or no provision for ventilation. It occurred to us that in this dead-air space, warm, moist air rising from the grain below would not be carried away and would tend to condense on the cold surface grain.

This hypothesis was in agreement with the general observation that a

layer of tough surface grain was more likely to develop in an annex loaded in the early fall when the grain was warm than in one loaded later with cool grain. In other words, the greater the difference in temperature between the main bulk of the grain and the cold surface grain, the greater the tendency towards “condensation” in the surface layers.

Moisture Leaves Warm Grain, Flows to Cool Grain

AT the Grain Research Laboratory it has been demonstrated experimentally, that moisture actually does move in a mass of grain from warm to cool grain. A large box, 8 ft. long and 4 ft. square was filled with wheat of 14% moisture content and completely sealed. One end of the box was kept at 90° F. and the other end at 32° F. After about 300 days the box was opened and it was found that the cooled grain was damp, moldy and spoiled. The excess moisture had apparently been contributed by the grain at the warm end of the box, since this grain had lost moisture.

This process of “condensation,” together with lack of ventilation, was largely responsible for the mite infestations of 1940-41. Characteristically, these developed in the layer of tough grain formed by condensation at or near the surface of the grain. However, as the summer of 1941 developed, other causes of mite infestation became apparent. Some of the country sheds had been built with the flooring resting on the ground, and grain on the floor acquired excess moisture and developed mite infestation. In other cases it was found that



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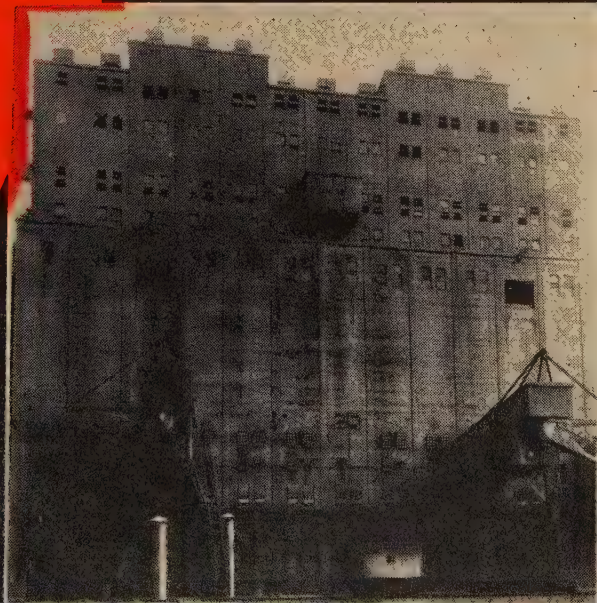
A Mountain of Evidence



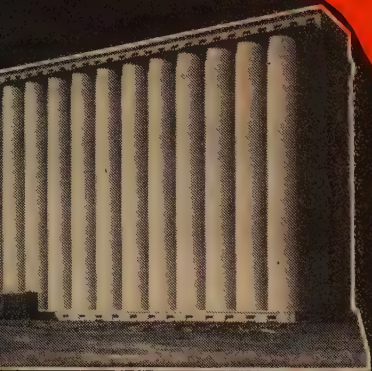
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rain running down the sides of the sheds was caught on various protuberances and directed into the shed. Wherever the grain acquired excess moisture, mite infestation generally developed.

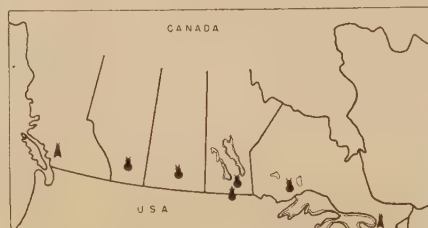
By 1942 most of the structural deficiencies of the country sheds had been discovered and repaired. Grain levels were dropped to the plate, ventilators were installed at eaves and roof to ensure a good flow of air over the grain surface, annexes resting on the ground were raised, eavestroughs were installed, and the bins were caulked at places where water might gain entrance. From the very first, the mites themselves were attacked directly with fumigants as I shall describe later. Whether from these various efforts or from some mysterious natural cycle I do not know, but reports of mite infestations began to fall off steadily until at this time they are almost rare. And this, we hope, is the happy ending to the mite story.

Rust-red Grain Beetles Most Bothersome Today

QUITE a different story is that of the rust-red grain beetle (*Laemophloeus ferrugineus* Steph.). This insect is so closely related as to be almost indistinguishable from the flat grain beetle which will be familiar to

the American Superintendents. It is a very small, flattened, reddish beetle which moves with considerable rapidity.

During 1940 we saw a few of these insects, usually in tough, mite-infested grain. By 1942, the rust-red grain beetle was reported as frequently as grain mites, and since then it has become the most important single pest of Canadian stored grain.



9—Map showing type and distribution of grain pests.

(9) The beetle-outlines on this map indicate the distribution of the rust-red grain beetle. It occurred in temporary storage sheds in the three prairie provinces and in the distress storage sheds at the Lakehead.

The rust-red grain beetle has all the attributes of a successful stored grain pest. It can multiply with great rapidity, it can live in dry grain, and it is not as sensitive to low temperatures as many grain pests. It is small and can live and migrate in great depths of grain. While the adult beetles appear to feed on broken kernels and wheat dust, the larvae attack the unbroken wheat berry, feeding on the germ.

Mistaken About Beetles Being Secondary Pests

THE rust-red grain beetle has been regarded as a "secondary" grain pest, dependent on other insects, such as the weevils, to reduce the condition of the grain, before it can become established. Our experience has shown the rust-red grain beetle as capable of establishing infestation in sound grain, without the assistance of other insects, and in this sense, it must be regarded as a primary grain pest.

The outstanding feature of rust-red grain beetle infestations is that wherever the insects become established in numbers, the grain invariably heats. The heating is relatively independent of the moisture content of the grain, since infested grain with a moisture content as low as 13.5% may heat to 100° F. or more.

Let us examine a typical case. The time is early March, and the place, a large "special" annex storing 1,000,000 bushels of wheat. Quite suddenly three areas of surface grain become tough, crusted, then rapidly, damp and sprouted. Two of the areas are

small and close together; within a few days they have merged and enlarged.

Have Own "Heat-Wave" Peculiarities

PROBING reveals that the grain is "tough" for only a foot below the surface; below this the grain is dry but heating to 105° F. and heavily infested with rust-red grain beetles. The heating grain extends through 20 feet of grain to the floor, but temperatures decrease to 75° F. at the floor. Four feet from the edge of the "hot spot" the grain is cool, with a temperature of 55° F.-60° F. and contains only the odd beetle. The "hot spot" seems to centre in the grain around a roof-support.

Grain samples show that apart from the damp surface grain, the grain does not show physical signs of heat damage although the odd starchy kernel is beginning to darken slightly. However, tests show that in the central part of the hot spot, the germination and quality of the wheat are reduced. Subsequently, the "hot spots" are removed and on the floor a few inches of caked, heated grain is found. This appears to be the result of moisture which has gained entrance through a break discovered in the wooden flooring.

From such instances we have constructed what seems to be the most probable history of rust-red grain beetle infestations. We may assume that even in thoroughly-cleaned grain, a few beetles are present. Apparently, however, these few cannot establish an infestation unless they find an area of moist grain, which then becomes the nucleus for an infestation. Usually, the infestations are initiated on the floor where moisture reaches the grain through cracks in the concrete flooring or where wooden floors have opened.

Once established in the resultant

KID SALVAGE



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area of moist grain, the insects rapidly increase and soon spread to dry grain which begins to heat. The infestation tends to develop vertically, and ultimately forms a column of hot grain from the floor to the surface. In cold weather, the large temperature difference between the hot grain and the cold surface grain results in rapid and heavy condensation.

Rice Weevils and Granary Weevils Invade Southern Manitoba

REFERRING to the map again you will see that weevils are indicated in the region of southern Manitoba. It is an interesting fact that weevils were never reported in commercially stored grain in Western Canada prior to 1942. Since that time, however, a small number of infestations have appeared, all in this one, small area. The area has a somewhat milder climate than most of Western Canada and within recent years has been producing corn. This suggests the possibility that the weevils may have been introduced in seed corn, although we have not been able to confirm this.

The weevils are primary pests of stored grain and we were much concerned to prevent them from reaching the main grain channels. With one exception, the infestations were light and in all cases, the grain was fumigated and diverted to a local mill. Cars carrying such grain were cleaned with compressed air or fumigated before being returned to service. To date weevils have not appeared outside the area of southern Manitoba.

Indian Meal Moth Causing Real Concern

THE only insect pest to cause any concern in permanent storage has been the Indian meal moth (*Plodia interpunctella* Hbn.). As indicated on the map, this insect has occurred in the west coast terminals and the transfer elevators on Lake Huron. During a late and unusually warm fall, there was an outbreak of this pest on the west coast; in the eastern terminals, the Indian meal moth has been a persistent pest with occasional severe outbreaks during the past few years.

The larva of the Indian meal moth attacks the germ of the wheat berry and completely removes it. The surface of infested grain becomes webbed and where the infestation is heavy, the grain may heat. The quality of grain damaged by the Indian meal moth is reduced. Fortunately, the infestation is usually confined to the surface grain, but around posts or bin walls the larvae may penetrate to

depths of 4 or 6 ft. In the late fall, the larvae form cocoons in cracks and crevices or in old grain lines on bins, and these emerge in the spring to produce a new infestation.

Methods of Detection Easier with Zelenys

PERHAPS the most apparent difficulty imposed by the temporary storage annexes is that of detecting trouble in such large bulks of grain. The distress storage annexes at the lakehead cover an area of about 2 acres, with a pile of wheat 45 ft. deep in the middle and 18 ft. at the sides.

The same difficulty exists to a lesser extent, in the 30,000 bushel country sheds.

Temperature is a useful indication of grain condition. In the distress storage annexes, small bore pipes, open at the top and extending to the floor were installed, usually on 20-ft. squares. Thermocouples were dropped down these pipes and temperatures read at regular intervals. In the country sheds, a small, torpedo-shaped probe enclosing a thermometer was used to obtain temperatures and an actual sample of the grain from various depths. A multiple-sample probe capable of taking simultaneous sam-



A Simple Problem in Weevil Calculation

WARM WEATHER AND WEEVIL . . . BOTH COMING UP! EVERY WEEVIL YOU LET LIVE TO CARRY ON MAY BE MULTIPLIED BY FIFTY TWO OR THREE MONTHS FROM NOW.

Similarly, every dollar you spend now on effective pest control may save you as much as \$50 . . . within two or three months.

THIS is the time to treat every bushel of infested grain, incoming or in turning . . . using

Larvacide

Over 99% pure chlorpicrin, toxic to all types of granary pests.

- ✓ **LOW COST**—Only \$1.50—\$1.70 per thousand bushels, in closed concrete bins.
- ✓ **KILLS LARVAE & EGGLIFE**—and penetrates kernels to destroy life within.
- ✓ **EASILY APPLIED** with simple applicators which can be "home made" in a few minutes.
- ✓ **SELF WARNING**—Its presence is unmistakable. Cuts risk of accident.
- ✓ **NO FIRE OR EXPLOSION hazard.**
- ✓ **STILL FURTHER ADVANTAGES**—Literature tells all about them.

For Grain in Shallow Bins that cannot be conveniently turned, use LARVACIDE 15-MIX by top application, 50 gal. drums only.

Larvacide is shipped in liquid form in cylinders 25, 50, 100 and 180 lbs. and handy 1 lb. Dispenser Bottles, each in sealed can, 12 to wooden case.

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BOSTON CHICAGO CINCINNATI
CLEVELAND OMAHA PHILADELPHIA

Innis, Speiden & Co.
New York 6, N. Y. (G-5-45)
We'd like to know how to hold down Weevil infestation in the months ahead.

Firm
Address
Attention of

ples at intervals of 3 ft. in 45 ft. of grain, was developed at the Grain Research Laboratory. This was an auger-type probe and was designed and used for sampling the distress storage sheds.

Despite these methods of checking the grain condition, it sometimes happened that the first indication of trouble was the appearance of a small area of tough, surface grain. For this reason, the "grain patrol" was instituted in the lakehead sheds.

(10) Some of the companies put men in the sheds every day to cover the grain surface foot by foot and to probe any suspicious areas. In the

country, superintendents were required to examine the grain surface



10—Grain stored in completed Lakehead annex.

and probe both from the top and through holes in the sides of the sheds. It is to this constant vigilance that we owe the fact that trouble was usually discovered before serious damage occurred.

Methods of Prevention Include Waterproofing

AS the causes of mite and insect infestation became apparent, preventative methods were developed. Since excess moisture in grain provides a great stimulus to insect infestation all possible steps to prevent the grain from acquiring a high moisture content were applied.

Adequate ventilation over the grain surface improved the "condensation" problem in the country sheds. Where "condensation" did occur, the grain was repeatedly shovelled and raked to expose the high moisture grain to the air. This effectively prevented "crusting" and promoted drying. Sometimes it was necessary to "skim" bins, drawing off the "tough," surface grain and shipping it.

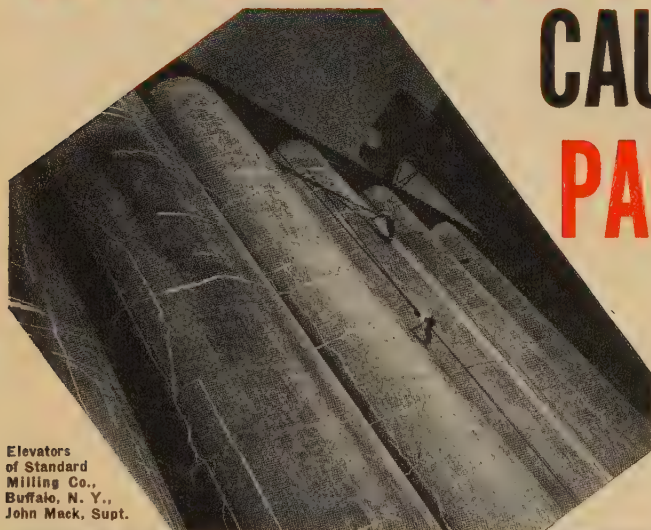
Cracks in concrete floors were the cause of considerable trouble. Our experience definitely indicates that a floor with an air-space between it and the ground is superior to a concrete or wooden floor laid directly on a gravel or earth fill. Cracks in concrete floors were sealed with asphalt when sheds were unloaded and on being reloaded this trouble seldom re-occurred. Waterproof paper on the floors gave some protection, but if the floor cracked, allowing moisture to enter, even the best paper disintegrated in time.

Cars and Plants Cleaned with Compressed Air, Fumigants

THE problem of preventing insect infestation was sometimes a matter of eliminating residual insects in an empty shed which had previously held infested grain. The sheds were usually much too open for successful fumigation and a variety of other methods were used. Where compressed air was available, this was used at 100-lb. pressure to thoroughly clean the shed. Contact insecticides were often applied to floor and walls in the form of a spray. In sheds with wooden floors, a thin dusting of lime was swept over the floor to fill all the cracks. Farmers were advised of a number of simple methods for preventing insect infestation in farm granaries.

The obvious preventative value of turning or loading grain in cold weather was utilized. Bulkheads were installed in some of the country annexes and in the Lakehead annexes, to facilitate turning. Periodic turning, particularly in cold weather, is now

WATERPROOFING CAULKING PAINTING



Elevators of Standard Milling Co., Buffalo, N. Y., John Mack, Supt.

THIS job done by world's famous LeMere's Steeple Jack Service, using waterproofing and Cartacaulk — products of The Supreme Paint Company, Cleveland, Ohio.

WE FEATURE straight chair work, instead of heavy scaffolding, and stages. More actual work and less rigging time. All work guaranteed. Fully insured. Go anywhere.

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The Supreme Paint Company, Buffalo Branch, 111 Dartmouth Ave. Phone PARKside 6328

practiced where feasible, despite the difficulties imposed by temporary storage facilities.

Grain cars carrying grain known to be infested, from country points to the Lakehead, are required to be designated as "infested." Such grain is never stored in the distress storage annexes. After unloading, these cars are inspected, and if residual insects are found, the cars are cleaned with compressed air or fumigated.

Show Fumigants "Cone-out" from Point of Application

THE most important method of controlling actual insect infestations is of course, by means of fumigants. Before releasing any fumigant for use in Canadian stored grain, it was thoroughly tested for its effect on grading characteristics and wheat quality at the Board of Grain Commissioners' Grain Research Laboratory. In advising specific fumigants, we also had in mind the human safety factor. Fumigants had never been generally used in Western Canada and precautionary measures were outlined by circular and at demonstrations. We had also to consider the bulk of the various fumigants since they would be used at many small and remote points.

These various factors and the item of cost in Canada led to the rather general use of chloropicrin as a grain fumigant. Chloropicrin was applied either alone or in mixture with carbon tetrachloride. One of the proprietary carbon tetrachloride-carbon disulphide mixtures has been used but its bulk and high cost in Canada have worked against its general adoption.

Recently, following a lead from Dr. R. T. Cotton of the U.S.D.A. Bureau of Entomology and Plant Quarantine, we have found carbon tetrachloride when used alone, to be an effective grain fumigant.

In winter the surface grain is very cold and we have found it necessary to insert the fumigant by means of hollow probes to a depth where the grain is warm enough to vaporize it. The fumigant is probed into the grain at close intervals to ensure an even coverage. There is some evidence that a fumigant tends to "cone-out" from the point of application so that the concentration will decrease with increasing depth. For this reason, where there is a considerable depth of infested grain, the fumigant is introduced at two levels.

Circling "Hot Spots" with Fumigant Successful

THE fumigation of a local "hot spot" in a large bulk of grain is often unsuccessful because the fumi-

gant tends to diffuse away from the heating grain. We have tried to counteract this by introducing the fumigant around the outside of the "hot spot" to create an anti-diffusion barrier to hold the main application in the heating grain. This gives good results where the depth of grain is relatively shallow but is not very successful against deep infestations.

Fumigation against the Indian meal moth in closed-topped bins is a relatively simple matter and we have obtained excellent results with chloropicrin which diffuses slowly enough to give a good kill against this surface-infesting insect. In the control of the Indian meal moth we have also used contact insecticides with good results. Routine spraying of bin-tops from the appearance of the first moth offers good promise as a control method. Last summer, one elevator which maintained routine spraying throughout the summer, showed only four bins lightly infested, while adjacent elevators showed general infestation.

In the distress storage annexes at the Lakehead, moving and cleaning

the infested grain has become the standard measure. As shipping has become easier, country sheds showing infestation are often unloaded and shipped to the Lakehead for cleaning and storage in terminal elevator bins.

This concludes our survey of the entomological problems we have encountered in Western Canada during the past four years. In conclusion I should like to say, it is a tribute to the vigilance of the Canadian grain trade that losses may be stated in terms of effort and outlay for control measures rather than actual losses of stored grain.

GRAIN AT ITS BEST

Grain is of the best quality if cut just short of dead ripe, shocked in the field for five to fifteen days, stacked properly and threshed in four to six weeks after sweating. If weather conditions permit this program, grain thus handled will be of better milling value than if there is any departure from it.—Orrin S. Dowse, Shellabarger Mills, Salina, Kan.



LET'S GET THE ADMIRAL HIS HORSE!



Official
U.S. Navy Photo

Admiral Halsey has his eye on a fine white horse called Shirayuki.

Some time ago, at a press conference, he expressed the hope that one day soon he could ride it.

The chap now in Shirayuki's saddle is Japan's Emperor—Hirohito.

He is the ruler of as arrogant, treacherous, and vicious a bunch of would-be despots as this earth has

ever seen.

Well, it's high time we got the Emperor off his high horse, and gave Admiral Halsey his ride.

The best way for us at home to have a hand in this clean-up is to support the 7th War Loan.

Your personal quota is big—bigger than ever before. So big you may feel you can't afford it.

But we can afford it—if American sons, brothers, husbands can cheerfully afford to die.

ALL OUT FOR THE MIGHTY 7th WAR LOAN

COMBINATION SCALPER-ASPIRATOR AHEAD OF DRIER PREVENTS FIRES AND SCORCHING, IMPROVES DRIER EFFICIENCY, LOWERS FUEL COSTS, REDUCES MAINTENANCE

*Harold Wilber's Drier Arrangement Not Only Saves the Grain,
But Eliminates Costly Shut-Downs, Trash*

According to Frank E. Carlson, Engineer,
Underwriters' Grain Association

DUE to an unusually wet corn crop this past season, driers all over the continent were pressed into action. Some that had not been operated for fifteen years or more were started up to help dry the dripping corn. As a result an unusual number of drier fires were experienced, some of which were minor, while others were bad enough to put the drier out of service for several weeks.

What were the main causes and what could be done to prevent these fires? That was the question.

Fires seemed to originate at two places. First, in the cells of the drier radiator itself, caused by stoppages from such materials as corncobs, sticks, pieces of paper, etc., which holds up a certain amount of grain at a point long enough to cause it to overheat, or for spontaneous combustion to take place. (2) The other spot is within the heat duct itself and is due chiefly to dirt, dust, beeswings, bean hulls, etc.

Steam and Direct-Heat Both Culprits

WHILE not all driers are alike in design, or possibly in location in some cases, nevertheless this fire bugaboo is constantly present in steam driers and direct-heat driers alike. As an example, I have found certain steam driers where the steam coils kept themselves clean. Other driers required a shut down so that the steam coils could be blown and cleaned twice every week in order to keep them reasonably safe from fire—as well as to derive the full benefit of the heat for drying the grain.

When it comes to human ailments, one usually goes to a clinic in the hope

of finding the answer to one's problems. In Minnesota we think of Rochester where the Mayo Brothers and their staff of specialists in most cases are able to tell you what is wrong and what can be done to correct it. While we do not have a clinic that can give us the exact answer for the prevention of drier fires, we do have plants whose businesses require that they operate their driers almost constantly the year 'round and where a drier fire might seriously affect the production of the entire plant. The experiences gained therein gives these operators the specialized knowledge required. What have these men done to prevent drier fires?

Installs Combination Scalper and Aspirator

HAROLD WILBER of the A. E. Staley Mfg. Company, Decatur, Ill., uses a combination scalper and aspirator directly above the drying unit which not only removes the



coarse objects, such as paper, stones, cobs, shot gun shells, etc., but also removes the fine dust, chaff, beeswings and bean hulls—by air. Very little dirt enters the drier inasmuch as the grain flows directly from this unit into the drier by choke feed. How vastly different than scalping the grain somewhere on the main floor and then having to re-elevate it to reach the drier—more dirt being generated by elevation.

The cleaning of the grain at that point not only removes the two chief causes of fire, but also materially aids the drying operation by allowing the warm air to directly reach the grain berry. Dust, chaff, beeswings and bean hulls act as insulation which impedes the drying operation.

Those who feel their fuel costs are too high might do well to investigate this idea also.

Another point I might mention is that the danger of starving the drier is overcome as the machine is automatically controlled and is set to deliver faster than any of the discharges are or can be set.

Harold Wilber doesn't want all the credit he deserves for this idea. As I understand it, Harold had the idea and convinced Charlie Ingram of the Hart-Carter Company of Minneapolis that it was a good one. So Charlie went to work at it. He did the engineering and the manufacturing of the unit that is serving the A. E. Staley Mfg. Company so well—and Harold is content. His mind is satisfied that his driers are operating as nearly free from fires as any drier could possibly be.

Installs Most Modern Dust System; Filter Air

IN addition to this they have a complete dust collection system which removes the dust and dirt at every discharge point, with floor sweeps on all floors. Harold Wilber gives Art Osgood of The Day Company at Minneapolis credit for this installation and would not be without it.

In answer to my questions Harold gave me a lot of information and told

me of many things which they have done to eliminate fires. They use screens of various sizes to filter air and some to serve as impingers, heat diffusers, etc., but cleanliness is the first requisite toward the safe operation of their grain driers. "Secondly", Harold stresses, "the man in charge must be alert and always 'on his toes'."

The above seems to answer, in general, the reasons for drier fires. The things Harold has done insure proper cleanliness and safety in his drier. These ideas, in my estimation, are valuable contributions for all who are operating grain driers, for those who are contemplating the installation of a new drier or the remodeling or re-vamping of their old driers. With his permission I pass them on to you.

SPENCER KELLOGG PLANT BURNS

Spencer Kellogg & Sons' original soybean plant in Des Moines was gutted by a fire of undetermined origin recently. This unit is some distance from the company's newer plant. Manager J. W. Pooley would not estimate the loss.

LARGE FEED PLANT BURNS

Fire starting in a pile of empty sacks in the warehouse recently destroyed the large feed manufacturing of the Stockmen's Feed & Mfg. Co. at Clovis, N. M. The concrete elevator withstood the heat, but the warehouses and offices were a total loss.

CYANIDE BALKS FIRE FIGHTING

Deadly cyanide fumes balked firemen fighting a third story blaze recently at the Hecker H-O Mills in Buffalo. Of undetermined origin, the fire started within twenty minutes after fumigators had sealed the building. The sprinkler system extinguished the blaze—the water doing considerable damage.

DUST BLAST IN OATS PLANT

General Mills suffered a dust explosion in a cyclone blower installed at their Purity Oats plant in Keokuk, Ia., this month. As a result a fire spread through the pipes of the feeder system before it was checked. The building was badly charred around the area of the explosion.

More people were killed from burns in their homes than were killed in all railroad accidents in the United States last year, says the National Safety Council.

SPARK-SCREEN FOR DRIER ELIMINATES FIRES NORMAN NELSON SAYS SPEED NOT IMPAIRED

Reports Frank E. Carlson, Engineer, Underwriters' Grain Association

In talking to Norman Nelson, Superintendent of the Archer-Daniels-Midland Co.'s Elevator at Decatur, Ill., I found, and he agreed, that the first requisite of safe drier operations is cleanliness.

He has been drying beans and corn for a good many years and doubtless has had a number of different ideas along this line of preventing drier fires, but the final outcome of his experimenting was a spark-screen in the heating duct just under the fan.

Mr. Nelson tells me: "I was constantly battling drier fires until the time I installed the spark screen." If my memory serves me correctly, he said he has had only one fire since he installed the screen in the drier—which was quite some time ago—and then upon investigation he discovered

a hole in the screen. "Obviously," he emphasizes, "it is necessary to keep the screen clean and in good repair if safe operation is to be expected".

Capacity Not Impaired

NORMAN says what he has done was not brought about by any scientific study or research work but rather in desperation, as unlike so many driers operated in connection with terminal grain houses where they are operated largely as a stop-loss proposition, with them it is a matter of production also.

Mr. Nelson also reports that "in spite of the fact that by figures the screen did reduce the duct area from 52% to 57%, it has in no way hampered our drying operations, but did stop the recurring of drier fires."

YOU CAN AVOID "CRYING OVER SPILT MILK" BY DOING YOUR CONCRETE RESTORATION AND WATERPROOFING NOW

We will make a Survey of your plant
without Cost or Obligation to you.

THE H. J. MELLEN COMPANY

53 W. Jackson Boulevard
Chicago, Illinois

Experts in Restoration, Water and Weatherproof-
ing of CONCRETE GRAIN STORAGE TANKS

He is using a No. 12 mesh which he prefers. He has also used No. 10 and No. 8.

(Author's Note: The two men of whom I have written are to be commended for their contributions. It is men like these who contribute such ideas from knowledge and experience that makes the Society of Grain Elevator Superintendents a great organization to belong to.)

He who is false to present duty breaks a thread in the loom, and will find the flaw when he may have forgotten the cause. — Henry Ward Beecher.

STANDING OATS EXPLODE

Something new in the matter of dust explosions is the increased number involving oats. Throughout the years explosions have been confined first to corn, second to wheat, and third to all other grains combined.

A recent explosion in an Iowa feed mill storage elevator occurred in stored oats, early in the morning, blowing out the wall of the structure and scattering about 2,000 bu. oats over the nearby landscape.

He called up his girl and said, "Are you free this evening?" and she said, "Well, not exactly free, but I'll be reasonable."

GRINDING WHEELS RATE HIGH

Question: We are very anxious to have an opinion from you as to whether or not it is safe to operate emery grinding wheels in dusty locations. Any information you can give or can secure will be very helpful and appreciated.—L.A.M.

Answer: The sparks from emery grinding wheels are considered to be just as hazardous, and consequently just as much to be avoided, as welding. If either is found to be mandatory during plant operations it is possible and practicable to confine same within a dust-tight enclosure, of which procedure we will publish further data as soon as available.

NON-SPARKING BLOWER

I was down in Nashville visiting our plant and our Superintendent there informed me of a portable blower with a totally enclosed motor for use in dusty grain plant locations. I ordered one of their model "G" heavy-duty service blowers, price \$65, and while it may not meet the Underwriters' requirements, it certainly doesn't show a spark anywhere.—George Steel, Ralston-Purina Co., St. Louis.

[Ed.: Word from Parke Burrows of Seedburo Equipment Co. indicates that several of the larger manufacturers of portable blowers for use in grain plants have submitted working models to the underwriters' Laboratories for tests and have received suggestions as to possible changes. Before very long approved blowers will doubtless be available, Mr. Burrows feels, which will not generate sparks and consequently introduce additional hazards.]

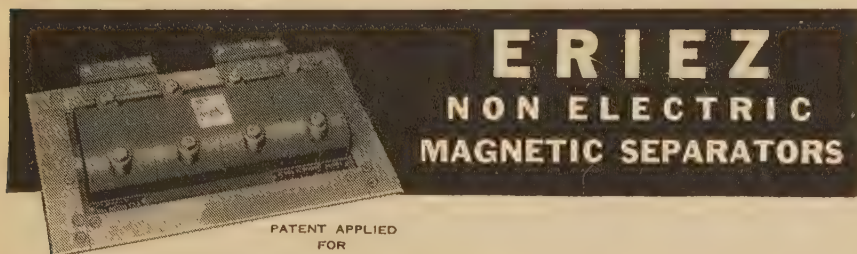
LIKES NEW BUCKETS

These new type buckets are a marvel to me. They do a neat and silent job of elevating that sure makes me happy.

We are getting the old Mt. Claire elevator all fixed up. Have a testing lab now as well as a complete re-vamping of the leg belts.

Brother Charlie frequently mentions the interesting activities of the Kansas City SOGES Chapter. Too bad there isn't a Chapter in every grain center so all could partake.—Frank A. Peterson, Mt. Claire Elevator Co., Inc., Baltimore.

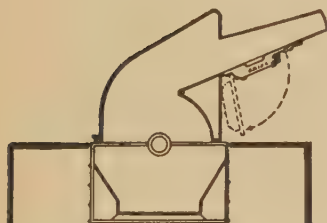
Count your assets. If you have a clear conscience and a good liver, if you have three good friends and a happy home, if your heart has kept its youth and your soul its honesty—then you are one of life's millionaires.



APPROVED BY
MILL MUTUALS

**Better than your Insurance Policy
... Protect your Equipment
Before an Accident**

HERE is definite concrete protection before the accident happens . . . An insurance policy takes care of you after the accident and helps you start anew . . . The Eriez Non Electric Magnetic Separator will pull tramp iron from your conveyor units or chutes, cleaning the material thoroughly of ferrous metallic objects whether your electric current is on or off . . . the Eriez works all the time. A permanent magnet, the first cost is the Eriez only cost. Write for Bulletin 101 with full installation particulars.



Typical Installation

- ① Easy to install—light . . . compact.
- ② A recognized safety device . . . Prevents fires. Magnet never sparks.
- ③ Fully guaranteed a permanent guard to protect processing equipment.



Typical Installation

ERIEZ MANUFACTURING COMPANY

119 East 12th Street • Erie, Pennsylvania

CARLOADINGS CLIMBING

Current carloadings of grain and grain products have climbed out of their previous cellar position—the slump being due to the inavailability of boxcars—to the third highest totals in recent years. Cumulative loadings for the first 19 weeks are 863,040, just 3% less than the 889,414 cars loaded last year, and just 3.6% less than the 895,086 loaded two years ago. Loadings during recent weeks were:

	1945	1944	1943
April 21	51,309	37,976	45,214
April 28	52,725	37,873	46,597
May 5	52,333	38,388	45,621
May 12	49,498	40,011	43,212

GRAIN EXPORTS UP 464%

Export grain unloaded at tidewater during April totaled 13,472 cars, compared with 2,390 a year ago—an increase of 464%.

WHEAT GRIND UP

During March 1,024 mills ground 51,284,237 bu. wheat as compared with 46,892,508 in February and 51,287,310 in January. Of the March grind 314 mills ground 93.9%.

BUYING ARGENTINE OIL SEEDS

This year's exportable surplus of linseed oil, linseed meal and vegetable oil seeds, hitherto used as fuel in Argentina, will be purchased by the U. S. Commercial Co. for delivery in 1945-46.

ARGENTINE CORN OFF 47%

About 47% of the total acreage planted to corn in Argentina had to be abandoned this season on account of drouth damage, leaving but 5,300,000 acres—the second smallest since 1916. The crop is estimated at only 35% of last year's low total of 343,700,000 bu., or 120,900,000 bu.

GRAIN OUT HUDSON BAY

For the first time in six years grain is expected to be exported through the National Harbours Board terminal on Hudson Bay, according to George McIvor, Canadian Wheat Board chairman. As soon as navigation conditions permit the Board plans to use this northern seaport to the fullest extent for exports to Europe.

Moths Now Held Responsible

Electric short circuits are sometimes caused by moths, according to one authority. What won't the critters munch on next?

WANTED

\$93,000,000 worth of RAILROAD TIES

This is an urgent call for help from American farms.

The railroads need crossties — millions of them this year.

Various kinds of wood can be used for crossties. They bring good prices. Do you have some right in your wood lot?

There's no single source big enough to meet all this demand. But if every farmer cuts and sells some of his timber — even a few dozen trees — it will add up to relieve a critical situation.

That's why we publish this appeal. You can make good money, and help the war effort, by cutting crossties *now*. See your nearest railroad agent.



AMERICAN RAILROADS

ALL UNITED FOR VICTORY

For Your Bulletin Board

1. Fri.—If a guard becomes broken or inoperative, the machine should be shut down until it can again be operated in a fully guarded condition.

2. Sat.—Good housekeeping is one of the most important factors in accident prevention.

3. Sun.—There are none so blind as those who do not see warning signs.

4. Mon.—Portable extension cords are safe if properly constructed, if kept in good condition, and if used in right places. Be sure!

5. Tues.—Safety posters give needed information on specific hazards.

6. Wed.—When a poor ladder is discarded it should be destroyed to make sure that no one puts it into service again.

7. Thurs.—Use your brains—a machine has none.

8. Fri.—Don't try to lift more than you can carry.

9. Sat.—Read safety posters regularly. It pays.

10. Sun.—It is dangerous to wear overalls (or other clothing) saturated with oil or grease.

11. Mon.—What did your last near accident teach you?

12. Tues.—Avoid blocking stairways and exits. They are hazards themselves, but the placement of tools and other objects increases the hazard.

13. Wed.—Horseplay is inexcusable and has no place in a safe plant.

14. Thurs.—Before starting machinery always double check that all is clear.

15. Fri.—Keep loose materials away from machinery. Do not use rags or waste around moving machinery parts.

16. Sat.—When runways or docks are wet, they are extremely slippery. Proceed with caution.

17. Sun.—Oilers must keep bearings and supports free from greasy dust.

18. Mon.—Provide a place for everything, and keep everything in its place.

19. Tues.—Obey danger signs for your own safety.

20. Wed.—Before operating any machine or tool, make sure that it is in safe condition.

June, 1945

21. Thurs.—Wear goggles where required—you can't grow another eye.

22. Fri.—When caution becomes a habit, there will be few accidents.

23. Sat.—Watch the bulletin board. This data is for your information.

24. Sun.—Honor and obey—the safety way.

25. Mon.—Always turn off the power before attempting to remove stuck or jammed pieces of material from a machine.

26. Tues.—Warn any man when danger is near. He may know about it, but if so no harm is done; if not, you may save a life.

27. Wed.—The greatest mistake—giving up.

28. Thurs.—Taking chances is a human trait, but you don't have to be superhuman to be safe.

29. Fri.—Do you go into an unfamiliar and hazardous department in violation of safety rules?

30. Sat.—He who invents a machine increases the power of man and through him the well-being of mankind.

The National Safety Council reports that most of the serious cases of infection start from small wounds. Get immediate first aid treatment for a cut or scratch.

There have been 30 million Americans injured in home front accidents since the war began.

Someone is injured through an accident in the United States every three seconds.

The United States lost 11,500 men in uniform through accidents in 1944.

A recent survey of a large city's hospitals showed 10% of its beds occupied by accidentees.

On the basis of previous experience, upwards of 10% of all cars to be checked in the Nationwide Brake Emphasis Program will fail to meet requirements, reports the National Safety Council.

Bob Johnson sleeps beneath this lid. He always claimed he couldn't skid. The fact remains he could—and did!

CORN PRODUCTS WINS HONORS

For the third successive year the Argo (Ill.) plant of the Corn Products Refining Company won the National Safety Council's highest wartime award for safe operations, according to Bill Radke, Lou Gillan and Lincoln Scott, company executives active in the Chicago SOGES Chapter.

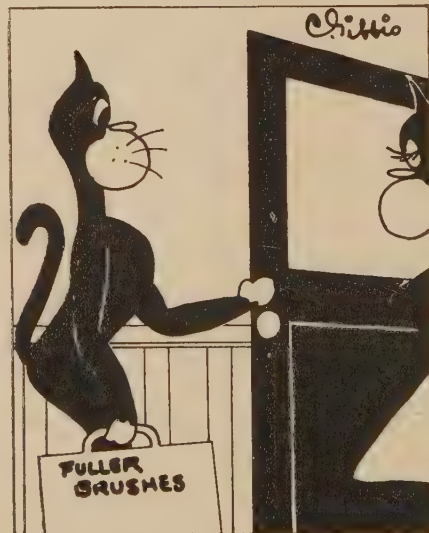
Car Door Accidents

Recently we have had a siege of hands and fingers smashed in opening and closing freight car doors. This is one that has bothered us and everyone else for years. For several years we had this type of accident almost dormant—one or two cases a year. Then suddenly we have had several cases within a couple of months.

We had a similar thing with hands in bi-parting elevator doors until about a year ago. We can't give the signs on all doors the credit for almost stopping this type of accident, but we have only had one medical report from this cause in nine month's time.

In our "How They Happen" each week we tell about accidents at other plants. These are warnings to every branch, and the facts about these accidents should be passed on to every man in the plant. This cannot be effectively done by merely posting them on the bulletin board. One way to do it would be to have each foreman talk to each man about the accidents that might occur in his department.

Intelligent publicity will go a long way in preventing these repeaters.



Snooper says—You'll never sell your employees on Safety unless you yourself are already sold on your subject.
—C. Gibson Franks.

We believe that each Superintendent will find some way of using these reminders to good advantage. Where you have bulletin boards or blackboards, you may wish to post (or write) these reminders on those boards. You may also use them for your own series of instruction cards, pay-roll inserts, etc.

By using the entire series, either on bulletin boards or by distribution to all employees, you will reach all workers in the plant with a succession of messages which will call their attention to all known hazards at least once during the year. SOGES Safety Contest Director Clarence W. Turning invites your comments and suggestions.

DUST CONTROL IS IMPORTANT!

SEVERAL recent serious dust explosions in the grain and milling industry have again directed attention to the wisdom and economy of efficient dust control. Compared with the losses suffered in these explosions, the cost of dust control installations is very small indeed.

Let DAY figure on your complete DUST CONTROL SYSTEM

DAY facilities include engineering, fabrication and installation of entire system—including Dual-Clone Dust Collectors, piping, fittings, dust tanks, pneumatic dust and material car loaders, and all other sheet metal work of standard or special nature—big or small.

DAY DUAL-CLONE DUST COLLECTORS

This patented DAY development—with its low resistance and high separating efficiency—is the key to the uniformly successful operation of DAY DUST CONTROL Systems. Its compact design saves space and greatly simplifies installation.

*Important information for you in our booklet
"DAY DUST CONTROL." Write for a copy.*

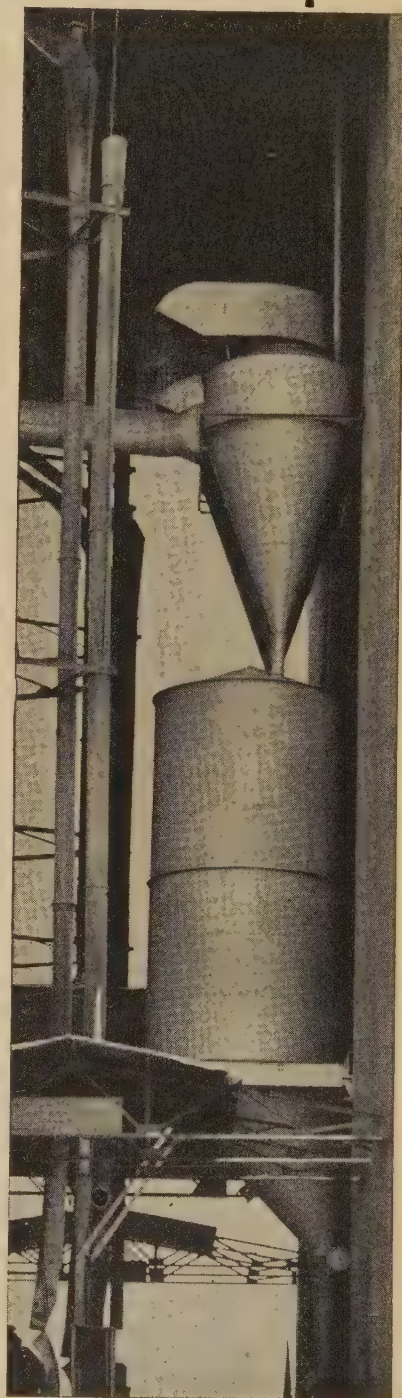
THE DAY COMPANY

814 Third Ave. N.E.

Minneapolis 13, Minn.

In Canada—The DAY Company of Canada, Ltd.

613 McIntyre Block, Winnipeg.



One of the many types of DAY installations at a grain elevator. The dust is discharged directly from the dust tank into box car below.

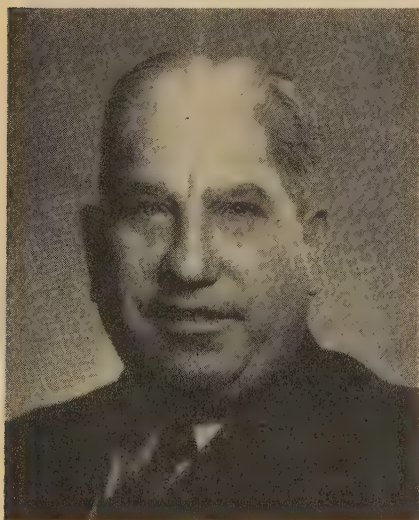
CHICAGO TO HOLD ANNUAL GOLF OUTING

July 14-15 have been set as the dates of the Chicago SOGES Chapter's annual golf tournament and week-end outing at Twin Lakes, Wis., according to word from President Steve Halac of The Glidden Company, who is handling the advance reservations. Located within easy range of town—just beyond Richmond, Ill.—the Commodore Barry Country Club is also but a few miles from the C&NW Genoa City (Wis.) station. Previously SOGES members from Milwaukee and other Wisconsin points, Minneapolis and Duluth, Kansas City and intervening points have joined the affair to enhance everyone's pleasure.

Golfing, fishing, swimming, boating, horseshoes, checkers, et al., are on the program—to say nothing of a flock of fried chicken served family style, according to Bill Radke, feed sales manager of Corn Products Refining Co., principal owner of the delightful resort. The visiting wives will be royally entertained, as heretofore, including the badger fight feature at "Ye Red Barn," provided two ferocious specimens can be captured.

POLSTRA TO SEEDBURO

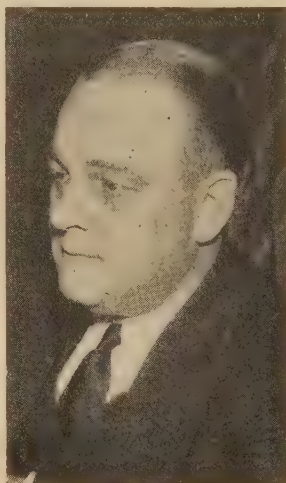
C. J. Polstra is now Seedburo Equipment Co.'s full time representative in Indiana. For several years he devoted only part time in the northern portion of the state. With the expansion of the Seedburo line, which now includes over 350 items for grain and processing plants, it was deemed advisable to better serve its growing



clientele through the services of a full time representative and "Abie" was a "natural" for the responsibility. Mr. Polstra is a riding enthusiast and a director of the Indiana Saddle Horse Ass'n.

DOWSE TO CHICAGO

Orrin S. Dowse, Vice President and Director of the Shellabarger Mill & Elevator Co., Salina, Kan., moves to Chicago on July 1 to become a Vice President of Rosenbaum Brothers, terminal elevator operators and grain merchandisers. Mr. Dowse has had charge of Shellabarger's grain department since the fall of 1941, when he left the Santa Fe Elevator Corp.,



operators of the Santa Fe elevator in the windy city. Prior to that association, where he also was a Vice President, Mr. Dowse held a similar position with Stratton Grain Co., Kellogg Grain Co., and Armour Grain Co.

Reared in the Chicago market, Mr. Dowse was a Director of the Board of Trade at the time of his leaving. He was likewise active in association affairs and a regular convention attendant. His older son and his son-in-law are both in the armed services and his younger son will be when of age.

Rosenbaum Brothers concurrently announces the retirement of Ralph A. Schuster as a Vice President, following forty-five years with the company, due to ill health.

DAY COMPANY IN EXPANSION MOVE

With more and more plants installing *modernized* dust control systems as permitted by the recent National Fire Protection Association code on the subject (which was developed in conjunction with the Weighmasters of the country), it was decided by The Day Company of Minneapolis to expand and streamline their activities to better serve our industry.

To that end the firm will hereafter operate a long established sheet metal plant in Kansas City, in addition to their enlarged Minneapolis and Winnipeg headquarters. Mr. W. A. Wieden-

mann of Kansas City will be in charge of operations in that city as well as serve as new president of the firm, assisted by Arthur B. Osgood of Minneapolis as Vice President, Roy E. Gorgen as Vice President in charge of sales, and Oscar Auvinen of Minneapolis as Secretary-Treasurer.

Newest departure from strictly dust control systems, which the company was organized in 1881 to engineer and install to help prevent explosions and fires in grain handling and processing plants, is the pneumatic car unloading and conveying system of which much will be heard in the future. The now famous Dual-Clone centrifugal dust collector was the company's last big innovation, which improvement wrought a new day in plant cleanliness and collector efficiency. And while their superior dust control systems will always constitute the lion's share of their business, it is likewise only natural that the firm should engage in kindred services needed by plant operators, so today bag cleaning units, steel flour bins, mill air-conditioning systems, and much special and standard sheet metal work is being done.

Having outgrown five other locations, the company acquired a new home office and plant in Minneapolis a short time ago, designed to relieve any future production bottlenecks with its 30,000 sq. ft. of floor space and complete shop facilities equipped with a great deal of especially designed machinery. The acquisition of a shop in the Southwest will further improve this service and speed up deliveries. Expanded, too, are its facilities to serve from Winnipeg, where well-known Clark McElevey has capably earned wide recognition for the Canadian company from coast to coast.

Through placing itself in the best possible position to efficiently serve the industry, the company hopes to become increasingly able to fulfill the rapidly ascending demands being made upon it for service and special equipment, including in the bright post-war period ahead. To further render engineering assistance, representatives are being carefully selected in strategic locations from coast to coast.

Temptation

A fussy, overbearing lady entered a crowded street car and began mumbling noisily over being compelled to stand. After edging everyone about for a time, a young man tapped her on the shoulder and asked, "Madam, you are standing on my foot. Would you mind getting off?" Bristling, she retorted, "Why don't you put your foot where it belongs?" "Don't tempt me, Madam, don't tempt me!" he countered.



DEPENDABLE DEFENSE

AGAINST DAMPNESS AND DETERIORATION

GUNITE, which does an A-1A job of repairing cracks and concrete disintegration is as hardy and full of fighting spunk as a Leather Neck . . . takes no back talk from time or the elements. Flinty hard, yes *harder* than cement itself, it is a dense weatherproof with a perfect bond to old cement.

URFACITE, which compensates for movement with an extremely tough elastic hide of

long-life flexible material bonded to the concrete, covers all surfaces *many times the thickness of ordinary waterproofing.*

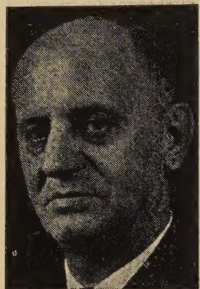
All of which means, DEPENDABLE DEFENSE against dampness and deterioration. Concrete restoration and weatherproofing at its supreme test.

Surveys and estimates upon request. No obligation. Write today.

JOHN D. BOLTON CO.

PRES. BRAND WANTS YOUR HELP

SOGES members can make their greatest contribution to the war effort by extending the successful fire protection work that they have been doing in the properties which they control or where they are in a position to give advice. Every fire prevented or extinguished with small loss is important, since all industry is contributing directly or indirectly to the war and any fire involving housing or any civilian facilities destroys essential materials and handicaps the war effort.



SOGES members have been remarkably successful despite the handicaps of war conditions. Not all losses can be avoided, but the stimulus of fire prevention and the information service provided will be a major factor in the reduction of unnecessary losses. Consequently our record can be extended throughout our industry if members as individuals will invite their friends and associates to join our Association.

Our membership dues are very small in proportion to the service rendered—in fact last year by reason of contribution of services by various members, we each received much more in actual value than our dues cost us. Unlike other organizations with higher membership dues, we are unable to employ solicitors to “sell” SOGES membership and must largely depend upon the interest and activity of our present members to extend the influence of the Association.

Will you do your part for victory by writing someone you know in a position of responsibility to become a SOGES member? Tell him about the Association; give him an application blank and send same to our office so that they may give credit to your name in the Honor Roll, or follow up the invitation by letter if necessary.

Yours for Victory and Progress,

Herbert C. Brand, President,
Society of Grain Elevator Superintendents.

SOGES IN STRONG POSITION

“Our financial position is admirable,” states Herb Brand, Quaker Oats Co., Cedar Rapids, president of the Society of Grain Elevator Superintendents. “Not only do we have a healthier cash balance on hand at the end of the calendar year 1944, but our reserves are improving daily in direct ratio to the activity reflected by our ‘wheelhorse’ members who have always been noted for their accomplishments.” Here’s the report, based upon the calendar year of 1944:

RECEIPTS

Cash on hand 1-1-44.....	\$ 112.41
Receipts from dues.....	2,874.55
	\$2,986.96

DISBURSEMENTS

Postage and express.....	\$265.58
Telephone and telegraph..	255.68
Meetings expenses	143.03
Safety contest expense....	342.67
Printing and letter service	589.60
Rent & misc. off. expense	680.72
Dues and subscriptions...	75.00
Flowers expense	23.32
Bank charges	49.58
	2,425.18

Cash on hand 12-31-44.....\$ 561.78

Cash on hand on May 1st, President Brand proudly reports, totaled \$1,036.22, and from the activities being reported in most areas this figure can be expected to grow in size continuously.

MINNEAPOLIS ELECTS NEW OFFICERS

E. N. Dietmeier, Superintendent of Archer-Daniels-Midland Co.’s Elevator K was elected president of the Minneapolis SOGES Chapter at the May meeting. He succeeds Clifford A. MacIver, assistant general superintendent of the same company. Smith L. Champlin, superintendent of A-D-M’s Delmar No. 4 house was elected vice president, and James Auld, Hales & Hunter Co., was re-elected secretary-treasurer. Directors and committeemen are to be announced later.

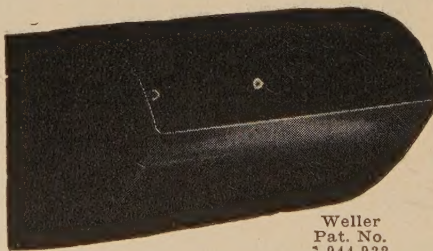
Each of this chapter’s meetings have been “tops” in the estimation of its members and as evidenced by an ever increasing number of attending members, due to the capable direction of President MacIver, who now plans to spend more time on the affairs of the national body, of which he is a director.

HEAR ABOUT SOYBEANS

Dr. J. W. Hayward, director of Biological Research and Development of Archer-Daniels-Midland Co., will present “The Story of Soybeans” before the Minneapolis SOGES Chapter next month,—the last meeting of the spring series.

TYLER LEAVES FLEISCHMANN

Abraham Tyler, for some time superintendent for Fleischmann Malting Co. in Chicago, has severed that association. He was planning on purchasing a country elevator.



If You Only Knew!

How much greater capacity you can get from your elevator legs . . . how much time, money and labor can be saved, you wouldn’t “Let the grass grow under your feet” before changing over to the

CALUMET Super Capacity Elevator **CUP**

. . . the elevator bucket with the Logarithmic Curve. Send for Form 35. Learn how much your elevator leg capacity and efficiency can be increased.

B. I. WELLER CO.

327 S. La Salle St.

Chicago 4, Ill.

KANSAS CITY ELECTS

Ward Stanley of Standard Milling Co. was elected president of the Kansas City SOGES Chapter at their annual election meeting this month. He succeeds Jim De Jarnette of Continental Baking Co. to this post. Earl Gray of Interstate Oil Co. is the new first vice president, and William Gravatt of Davis-Noland-Merrill Grain Co. is second vice president.

New secretary is Bernard E. Friel of Mid-Continent Grain Co., succeeding John Blowers of Standard Milling Co., and new chairman of the Board of Directors is Harley Hixson of Continental Grain Co. Other Directors include Hugh King of Scoular-Bishop Grain Co.; Harry Madison of Simonds-Shields-Theis Grain Co.; Roy Harp of Wolcott & Lincoln, Inc.; Eric Matson of Cargill, Inc., and Jim De Jarnette of Continental Baking Co. Meetings will be resumed in the fall.

WINDY CITY CALLERS

Recent Chicago visitors include Orrin S. Dowse, Shellabarger Mill & Elevator Co., Salina; M. E. Grant, Brooks Elevator Corp., Minneapolis; Edward E. Frauenheim, Jr., G. J. Meyer Malt & Grain Corp., Buffalo, and Arthur B. Osgood, The Day Co., Minneapolis.

GEORGE DUNKELBECK RETIRING

George Dunkelbeck, Superintendent of Van Dusen-Harrington Co.'s Monarch Elevator in Minneapolis, will retire on July 1 after an extended period in the company's employ. George has been very active in the Minneapolis SOGES Chapter's affairs, and in addition to serving on a number of important committees, was a vice president thereof. He does not plan to drop entirely out of sight, he says, but expects to be another postman on holiday.

SPONSORS SOGES LAPEL CONTEST

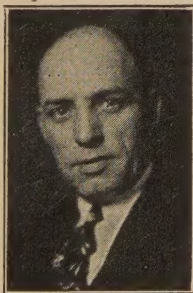
Russell B. Maas, Vice President of the Screw Conveyor Corp., Hammond, Ind., speaking for the Associate Members of Chicago's SOGES Chapter, offers three prizes of war bonds to the top winners of a contest for the best designs submitted for a suggested lapel pin for members to wear.

"The first prize will be a \$50 war bond, and the second and third prizes will be \$25 war bonds," he states. "A special committee will be appointed to make the selections. Entries should be addressed to Mr. Maas at 700 Hoffman St.

"The best ideas will be rewarded rather than the neatest drawing," he emphasizes.

HARRY THOMS RETIRES

Harry Thoms, long elevator superintendent of Stratton Grain Co.'s Kinnikinnic Elevator in Milwaukee, has taken a leave of absence because of ill health. Harry had a mild stroke some time ago and never seemed to fully recover, although the doctors can find nothing wrong now. He has purchased a log cabin tourist camp in northern Wisconsin where he is living at present.



General convention chairman of the SOGES convention in Milwaukee in 1939, of which he made an outstanding success with the co-operation of his capable committee, Harry served as a committeeman and a director for a number of years. There were very few conventions to which he did not contribute considerable. As soon as his present address becomes available we will pass it along.

HARRY COWAN PASSES AWAY VERY UNEXPECTEDLY

W. Harry Cowan, Manager of the Maple Leaf Milling Co.'s Port Colbourne properties, died very suddenly on April 28th. He had been in poor health for some time and was convalescing at Victoria, B. C., at the time of his unexpected death.

Manager for the past 16 years, Mr. Cowan had been with the company the last 28 of his 58 years. He transferred to Port Colbourne in 1917 as Assistant Manager from the company's plant at Thorold. He spent one year at the Head Office as Traffic Manager and returned to Port Colbourne in 1923.



His genial personality made him extremely popular both inside and outside of his business associations; the company lost a highly esteemed executive and his fellow-workers lost a true friend with his passing.

To say that he was a prominent citizen would be an understatement, for Harry Cowan was chairman and dean of the board of education, was active in the work of the Central United Church and a member of the choir for years, a past president and active member of the Lion's Club, as well as of the Masonic Lodge and Odd Fellows.

As a past president and long-time executive of the Port Colbourne Senior Hockey Club, Mr. Cowan had done much for the sport and the community. A staunch Liberal, he was president of the Liberal Association for a number of years. His widow, three daughters and one son survive him.

GOOD ATTENDANCE AT TWIN CITIES

We had a very good meeting on May 1st, with 63 being in attendance.—James Auld, Hales & Hunter Co., Minneapolis SOGES Chapter Sec'y.

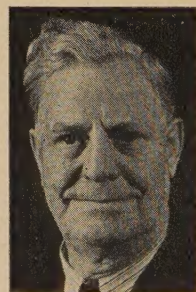
FISHER SUCCEEDS COWAN

Announcement was made by Mr. D. C. MacLachlan, President of the Maple Leaf Milling Co., Ltd., at the eighth annual banquet of the Employees' Ass'n held in Port Colbourne recently, that Mr. J. S. Fisher would assume the management of the company's plant there immediately. Formerly Mr. Fisher was Assistant Manager under the late Harry Cowan, succeeding Mr. G. A. Scrimger last December when the latter was transferred to Toronto to become Treasurer of the Company. Mr. Fisher is having the late Mr. Cowan's SOGES membership transferred to himself and hopes to take an active interest therein.

BILL WHITING RETIRES

William Whiting, widely known elevator super who formerly operated the big 10,000,000 C. & N. W. elevator in Chicago for Rosenbaum Grain Corp., is retiring because of ill health.

In recent years he has operated the Santa Fe terminal for the Santa Fe Elevator Corp. Bill is large of stature and heart and in his earlier days took an active part in the Superintendent's Society.



Succeeding him at the Santa Fe is William Brazel, formerly foreman. George Johnson becomes assistant super.

Wisdom is divided into two parts: having a great deal to say and not saying it.—Anon.



CALLS A

HALT!

ON DUST EXPLOSIONS

Established as a first line of defense, in elevator legs, the Robertson Safety Ventilator puts a quick end to disastrous depredations of Dust Explosions, by hustling them out through vents.

Secondary blasts are prevented and primary explosions curtailed by the ceaseless gravity operation of Robertson Safety Ventilator which perpetually vents fine dust from elevator legs. Be on the safe side with Robertson Safety Ventilators. Write for descriptive literature today.

H. H. **ROBERTSON** CO.

Farmers Bank Bldg.

Pittsburgh, Pa.